Spiritual Care Model Using Callista Roy's Adaptation Theory Approach to Anxiety Level in Ischemic Stroke Patients

Aria Nurahman Hendra Kusuma [1] , Dwi Pudjonarko [2] , Untung Sujianto [3]

[1] *Student from the Doctoral Study Program in Health Medicine, Diponegoro University, Semarang, Indonesia, ariahendra55@gmail.com*
[2] *Lecturer in the Doctoral Health Medicine Study Program, Diponegoro University, Semarang, Indonesia, dr.onang@yahoo.co.id*
[3] *Lecturer in the Doctoral Health Medicine Study Program, Diponegoro University, Semarang, Indonesia, untung71@yahoo.co.id*

KEYWORDS

Ischemic stroke, Spiritual care, Anxiety

ABSTRACT

Ischemic stroke causes physical disability, triggers negative perceptions, pessimism, anxiety and depression about the future. Anxious stroke patients feel a sense of failure, life is meaningless, and lose interest, which decreases physical exercise adherence, worsening stroke severity, daily activities, social engagement, and quality of life. Spiritual care using Callista Roy's adaptation theory is important for fulfilling spiritual needs, helping to find meaning in life, an optimistic attitude and the ability to adapt. Spiritual care is easy, cheap, simple and safe for all patients, creating a positive attitude towards oneself, the environment and the future. This study aims to analyze differences in anxiety levels in ischemic stroke patients with spiritual care interventions using Callista Roy's adaptation theory. This quantitative research used the Quasy Experimental method with a pre test-post test control group design on 30 intervention patients and 30 control patients. Data were analyzed using the Mann Whitney test with a p value of 0.033, indicating a significant difference in anxiety levels in intervention patients.

INTRODUCTION

Stroke is a non-communicable disease that worries many people. Stroke is an emergency disease and requires immediate help. According to the World Stroke Organization in 2018, stroke is the second leading cause of death and the main cause of disability at 87%. Currently, around the world there are 80 million people who experience strokes with 5.5 million people dying every year and more than 116 million years of disability. The incidence of ischemic stroke patients during 2019 was 67.5 million and 15 million hemorrhagic stroke patients. (World Stroke Organization, 2019) In the United States, data on stroke cases reached 24.9 % in 2016. In 2030, the incidence of stroke is expected to increase by almost 4%. (Anderson, 2019) On the other hand, in 2015 the number of cases of physical disability due to stroke in Australia was 40% or 36,700 patients. This means that cases occur in around 100 patients every day and the death rate is 8,200 patients. (Australian Institute of Health and Welfare, 2018)

The incidence of stroke in Indonesia has increased from 7% in 2013 to 10.9 % in 2018. The largest distribution of stroke cases in Indonesia is in East Kalimantan Province at 14.7 % and 11.8% in Central Java Province. Based on the prevalence of age groups, age >75 years dominates at 50.2%, while strokes in young people aged 15-24 years are 0.6%. (Indonesian Ministry of Health Health Research and Development Agency, 2018)

The proportion of deaths due to stroke in Indonesia was recorded at 19.3 % and the remaining 80.7% experienced mild to severe disability. (Mihardja et al., 2016) . Disability can occur as a result of functional decline and the tendency to experience persistent health problems can potentially lead to the inability to carry out daily activities. Patients who suffer from physical disabilities will trigger negative perceptions of biopsychosocial life. Patients have negative perceptions causing feelings of pessimism, anxiety and even depression about the future. (Kennedy, 2007)

Based on meta analysis research conducted by Knapp (2020), it shows that the percentage of anxiety of 24.2 % did not experience a significant decrease until 24 months after the stroke. (Knapp et al., 2020) Anxiety is a subjective feeling, a feeling of insecurity and comfort regarding a threat without knowing the cause. (Mohammad & Ahmad, 2018) . Anxiety is influenced by several factors including gender, age, self-concept, level of education, family support and physical condition. Physical conditions that have

increasingly worsening limitations in motor and sensory activities are influenced by feelings of uncontrollable anxiety. (Lee et al., 2019) Stroke patients who experience anxiety give rise to feelings of failure in achieving life goals, life is meaningless, inertia and loss of interest which can reduce compliance with physical exercise so that it has a negative impact on stroke severity, daily living activities, social involvement, and quality of life. (Lee et al., 2019) , (Yao et al., 2017) , (Chau et al., 2009) , (Kroeders et al., 2013)

Various efforts have been made to treat anxiety in ischemic stroke patients, including using pharmacological and non-pharmacological techniques. Pharmacological techniques include using Selective Serotonin Reuptake Inhibitors (SSRI) drugs. Fluoxetine is a class of SSRI which has the main function of increasing the activity of serotonin in the brain, this drug is used in patients suffering from mental disorders. (Prasetyaningrum & Advistasari, 2018) Pharmacological therapy using fluoxetine at a dose of 20 mg for 3 months can reduce anxiety by 38.3%, but long-term use of fluoxetine has adverse side effects including nausea, insomnia, risk of bone fractures and delays in functional recovery. (Dennis et al., 2019), (Zou et al., 2013)

Non-pharmacological nursing interventions for managing anxiety, including music therapy, art therapy, guided imagery and slow-stroke back massage, show a reduction in anxiety in the short term but are still less than optimal due to the unavailability of guidance that forms self-management related to problem-solving skills and oriented decision making. problems and determine appropriate actions so that patients have the ability to overcome anxiety independently in the long term. (Parke et al., 2015) , (Abazarian et al., 2015)

Spiritual care is an intervention to find the meaning of life through empowering patients in developing intrapersonal, interpersonal and transpersonal relationships to overcome problems that aim to provide comfort, formulate moral values, help overcome sadness and loss during illness. (Yusuf et al., 2016) Stroke patients have a low level of spirituality as much as 45.7 %. Low spirituality is caused by the lack of a system that supports patients in improving their spiritual well-being, such as the lack of the role of nurses in assessing spiritual needs, the absence of programs in the neurology clinic, and an uncomfortable environment. (Mulyani et al., 2018)

Spiritual care interventions can foster hope about the potential for healing. (Afshar et al., 2021) Patients have high hopes that this will make patients more compliant with undergoing regular stroke treatment. The role of spiritual care is very important in helping patients fulfill spiritual needs related to interaction with God which contributes to finding meaning and purpose in life as well as an optimistic attitude so that they have the ability to adapt better to illness. Good adaptability will form mental resilience during ischemic stroke treatment, so an exclusive spiritual care program is needed in the neurology clinic. (Büssing & Koenig, 2010) , (Khalajinia et al., 2021) , (Skolarus et al., 2010) Spiritual care is an action that is easy, cheap, simple and safe to apply to all patients because it creates a positive attitude towards oneself, the environment, and the future. (Salamizadeh et al., 2017)

The spiritual care model is an interprofessional collaborative intervention in providing spiritual services by helping patients understand the meaning of illness and gain hope to overcome illness situations. (Góes & Crossetti, 2020) However, the scope of the spiritual care model still needs to be developed from a different perspective as an independent nursing intervention for the treatment of psychosocial adaptation disorders resulting from the impact of stroke. Stroke patients experience problems related to the inability to adapt their self-concept and changes in role function which can trigger anxiety so that patients have maladaptive coping such as limiting social and physical activities which can hinder stroke recovery. (Gandana & Kariasa, 2017) , (Musser et al., 2015) , (Kroeders et al., 2013) One of the nursing models that has broad and deep meaning in adaptation in the biopsychosocial dimension to chronic disease is Callista Roy's theoretical adaptation model.

Callista Roy's theoretical adaptation model aims to improve adaptive responses in each physiological dimension, self-concept, interdependence and role function. (Alligood, 2017) Nurses have an important role in providing nursing actions that can manipulate focal, contextual or residual stimuli, so by manipulating all these stimuli it is hoped that patients will be able to adapt. (Alligood, 2017) Nurses manipulate stimuli using spiritual care interventions to provide spiritual guidance to patients in tolerating

adverse threats and family involvement in biopsychosocial care, so it is hoped that this can realize patient independence in determining adaptive behavior. (Yilmaz & Kara, 2020)

Nurses provide spiritual care interventions with the hope that patients will have strong spiritual beliefs, when experiencing health problems they will adapt by focusing their attention in praying and asking God for guidance which contributes to developing positive beliefs to be able to overcome their illness. (Yilmaz & Kara, 2020) Spiritual care interventions require further development that is integrated with biopsychosocial needs so as to produce adaptive coping during ischemic stroke rehabilitation treatment. Thus, this research will develop a spiritual care model using Callista Roy's adaptation theory approach to reduce anxiety and outcomes in ischemic stroke patients.

Based on the description of the problem in the background, this researcher wants to examine how developing a spiritual care model using Callista Roy's adaptation theory approach can reduce anxiety in ischemic stroke patients and whether there is a reduction in anxiety in ischemic stroke patients after receiving intervention in the form of developing a spiritual care model using an adaptation theory approach. Callista Roy.

The objectives of this research are also divided into two, namely general objectives and specific objectives. The general aim of this research is to produce a spiritual care model using Callista Roy's adaptation theory approach that is effective in reducing anxiety in ischemic stroke patients. Meanwhile, the specific aim of this research is to analyze differences in anxiety levels in ischemic stroke patients who received the spiritual care model intervention using Callista Roy's adaptation theory approach compared to the group who did not receive this intervention. Thus, it is hoped that this research can make a significant contribution to efforts to improve the quality of life of ischemic stroke patients through a spiritual approach that is integrated with Callista Roy's adaptation theory. The researcher hopes that this research will be useful and make a very important contribution to the development of science and can provide many benefits for readers, not forgetting to serve as a reference source for future researchers.

RESEARCH METHODS

The scope of this research is nursing knowledge in patients with serotonin, anxiety, cortisol and poor *outcomes in* ischemic *stroke patients.* This research is a *quasi experimental type of research* with *a pre test-post test control group design* . The form of treatment was *spiritual care* using Callista Roy's adaptation theory model approach, while the control group received generic *spiritual care intervention* which was routinely carried out by nurses. The research was conducted in the Outpatient Department of Dr. Regional General Hospital. Moewardi Surakarta from October to December 2022. This research is intended to determine the effect of intervention on anxiety in the treatment and control groups. The measurement results of the two groups were compared to determine the differences. Research design as follows:

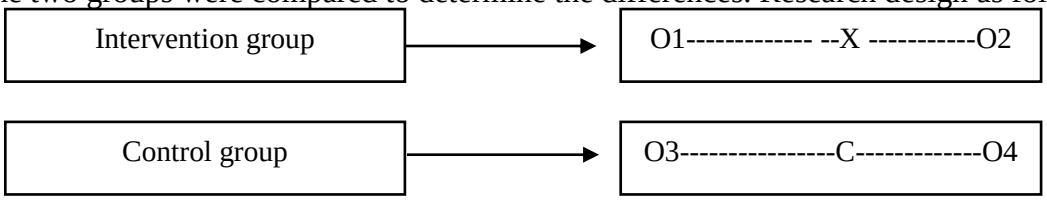

Figure 4.2 Research Design Scheme (Sugiyono, 2018)

Information:

X : Spiritual care model with Callista Roy's adaptation theory approach.

C : Generic spiritual care intervention that is routinely carried out by nurses.

O1, O3 : Initial data before treatment, intervention group and control group include serotonin levels, anxiety, cortisol levels, and outcome.

O2, O4 : Initial data after treatment, intervention and control groups include serotonin levels, anxiety, cortisol levels, and outcome.

The target population in this study is ischemic stroke patients, while the accessible population is ischemic stroke patients who are treated in outpatient care at the Dr. Regional General Hospital. Moewardi Surakarta. Sampling was carried out using a consecutive sampling technique, namely a type of non-

probability sampling where every respondent who meets the research criteria is included in the study until the required number of respondents is met.

Participants in this study were some patients in the Outpatient Department of Dr. Regional General Hospital. Moewardi Surakarta. Participants were selected based on the following criteria:

a. Patients aged 30-60 years.
b. Patients with a GCS score ≥14.
c. History of first stroke.
d. Typical ischemic stroke patients with lesions in the internal capsule shown by CT scans of the brain.
e. Patients with treatment according to the PERDOSSI guidelines.
f. Willing to become a research participant by signing a letter of approval or informed consent.

The exclusion criteria in this study are as follows:

a. Patients who experience sensory disorders.
b. Patients who experience mental disorders.
c. Patients experiencing dementia are indicated by an MMSE score <24.

The sample size is calculated using the sample size formula for testing the mean difference between two populations. (Sastroasmoro & Ismail, 2014) :

$$n_1 = n_2 = 2\left[\frac{(Z\alpha + Z\beta)}{X_1 - X_2}\right]^2$$

$$n_1 = n_2 = 2\left[\frac{(1.96 + 1.28) \cdot 33.5}{23.29 - 28.13}\right]^2$$

$$= \left(\frac{571}{-4.84}\right)^2 = 24.8260 = 25$$

Information:

n_1 = Sample size in the intervention group.
n_2 = Sample size in the control group.
$Z\alpha$ = Type I error is set at 5% so the hypothesis is one way so $Z\alpha = 1.96$
Z_β = Type II error is set at 10% so $Z_\beta = 1.28$
S= Standard deviation/standard deviation of the difference in scores between after and before therapy. (Akbari et al., 2020)
X_1 – (Akbari et al., 2020)

If there is a possibility of *drop out* , the size of which is estimated to be 20%, the sample size calculation with *drop out correction* is: 5. Based on the calculation above, 30 people are needed for each research group, so the total sample size is 60 people to be research subjects. This research takes into account the possibility of dropping out at 20%, so 30 people are needed per group, with a total sample of 60 people. Research variables include the independent variable (development of a spiritual care model using Callista Roy's adaptation theory) and the dependent variable (anxiety). Data Types and Data Collection Techniques, anxiety data was measured using HARS (Hamilton Anxiety Rating Scale), which has high validity and reliability (0.93 and 0.97). HARS measures anxiety through 14 items covering various aspects such as feelings of anxiety, tension, fear, sleep disturbances, and somatic symptoms. Intervention Description: Spiritual care interventions involve techniques such as Spiritual Emotional Freedom Technique, prayer, social skills training, and listening to God's word/spiritual singing. The intervention group received spiritual care intervention once a week for 3 months, while the control group received generic spiritual care. The intervention was carried out by researchers and nurse facilitators. Research Flow: The preparation stage includes preliminary studies, preparation of proposals, and obtaining research permits. The implementation phase includes obtaining permits, outreach, enumerator training, patient screening, research explanation, and dividing subjects into intervention and control groups. Anxiety measurements were carried out before and after the intervention. Data Processing and Analysis in this research are SPSS version 17.0. Univariate analysis was used to provide a general description of subject characteristics, while bivariate analysis used

the Mann Whitney U Test for data that was not normally distributed.

RESEARCH RESULTS

Univariate analysis

There were 60 research respondents consisting of the intervention group (n=30) and the control group (n=30).

Table 2. Frequency Distribution of Respondent Characteristics

Respondent characteristics	Category	Intervention group		Group control	
		N	%	N	%
Age	21-40 Years	5	83.3	1	16.7
	41-60 Years	25	46.3	29	53.7
Gender	Man	18	47.4	20	52.6
	Woman	12	54.5	10	45.5
Education	elementary school	7	50.0	7	50.0
	junior high school	6	35.3	11	64.7
	high school	14	63.6	8	36.4
	Diploma	2	100	0	0
	Bachelor	1	20.0	4	80.0
Obedience	1x absent	6	42.9	8	57.1
	2x absent	3	50.0	3	50.0
	Always present	21	52.5	19	47.5
Mecobalamin	Yes	17	47.2	19	52.8
	No	13	54.2	11	45.8
Citicoline	Yes	9	39.1	14	60.9
	No	21	56.8	16	43.2

Based on Table 5.2, the frequency distribution of age characteristics found that in the intervention group the majority were aged 41-60 years, amounting to 25 (46.3 %), while the majority in the control group were aged 41-60 years, amounting to 29 (53.7%). In the frequency distribution of gender characteristics, it was found that in the intervention group the majority were male, numbering 18 (47.4 %), while in the control group the majority were male, numbering 20 (52.6%). In the frequency distribution of educational characteristics, it was found that in the intervention group the majority had a high school education, numbering 14 (63.3 %), while the majority in the control group had a high school education, numbering 11 (64.7%). In the frequency distribution of compliance characteristics, it was found that in the intervention group the majority of compliance in the always present category was 21 (52.5 %), while in the control group the majority of compliance in the always present category was 19 (47.5%). In the frequency distribution of compliance characteristics, it was found that in the intervention group the majority of compliance in the always present category was 21 (52.5 %), while in the control group the majority of compliance in the always present category was 19 (47.5%). In the characteristic frequency distribution of mecobalamin, it was found that in the intervention group, the majority of mecobalamin was in the yes category, numbering 17 (47.2 %), while in the control group, the majority of mecobalamin was in the yes category, numbering 19 (52.8%). In the characteristic frequency distribution of citicoline, it was found that in the intervention group, the majority of citicoline in the no category was 21 (56.8 %), while in the control group the majority of citicoline in the no category was 16 (43.2%)

The distribution of anxiety is displayed in numerical variables and analyzed using univariate descriptive analysis presented in table 5.6

Table 3. Average distribution of anxiety (N=30)

No	Variable	N	Mean	Median	elementary school	Min	Max	p-value
1.	Pre Anxiety (Intervention)	30	19.03	18.00	4,422	14	30	
2.	Pre Anxiety (Control)	30	20.87	19.00	5,680	15	31	
3.	Post Anxiety (Intervention)	30	17.07	16.00	4,948	10	31	0.033
4.	Post Anxiety (Control)	30	20.37	18.00	6,094	11	30	

Based on Table 5.6, in the intervention group the average pre-anxiety score was 19.03 (SD= 4.422), this value was greater than the post-anxiety score of 17.07 (SD= 4.948). The control group's average pre-anxiety score was 20.87 (SD=5.680). This value was greater than the post-anxiety score of 20.37 (SD=6.094). These results mean that providing spiritual care intervention can reduce anxiety in the intervention group. The comparison of the two post-anxiety data in the intervention group and post-anxiety data in the control group has a significance of 0.033, which means that the intervention group and the control group are statistically significantly different. The research hypothesis was proven to reduce anxiety in ischemic stroke patients who were given a spiritual care model intervention using Callista Roy's adaptation theory approach.

DISCUSSION

The influence of the spiritual care model intervention with Callista Roy's adaptation theory approach in reducing anxiety

The results of the research show that the comparison of the two post-anxiety data in the intervention group and post-anxiety data in the control group has a significance of 0.033, which means that the intervention group and the control group are statistically significantly different. The research hypothesis was proven to reduce anxiety in ischemic stroke patients who were given a spiritual care model intervention using Callista Roy's adaptation theory approach. Anxiety is described as an unpleasant mood situation accompanied by subjective feelings of uncertainty and threat in the future. (Stahl, 2013) The mechanism for anxiety is due to an imbalance between GABA, serotonin, norepinephrine, and dopamine in the central nervous system. Serotonergic neurons in the raphe nuclei of the brain stem, norepinephrinergic neurons in the locus caeruleus, and dopaminergic neurons project fibers to the limbic system, such as the hippocampus, cerebral cortex and amygdala nuclei. An abnormal increase in monoamine neurotransmitters in the limbic system causes anxiety. (Vismara et al., 2020)

Ischemic stroke patients undergoing long-term treatment often feel worried about their disease, especially regarding future survival. Respondents face economic problems, difficulties in maintaining employment, limitations in daily living activities (ADL), limitations in carrying out religious services, disruption of social roles, and fear of death. These limitations can have an impact on patients' beliefs about pain, leading to anxiety and depression, as well as their ability to adapt. This is in accordance with research conducted by Lee (2019) which states that ischemic stroke causes functional changes in the body that disrupt the patient's ADL. If the inability to adapt for 1 month has the potential to cause anxiety. (Lee et al., 2019) According to Callista Roy, anxiety during adaptation arises not only because of physiological changes but also changes in psychosocial status, where stroke patients experience changes in self-concept, social roles and interdependence. (Alligood, 2017) Patients who experience an ischemic stroke will have an impact on reducing social participation, this will give rise to anxiety reactions due to a lack of contribution to life in society. (Chun et al., 2018) Research conducted by Dharma (2022) states that the importance of psychosocial adaptability will make a major contribution to the quality of life of stroke patients. Therefore, efforts are needed that can help respondents adapt to overcome their anxiety. (Dharma et al., 2022)

Callista Roy's adaptation model reflects spirituality which is rooted in the assumption of connectedness to the Almighty Creator, self-introspection, self-expression in dealing with fellow humans and the entire universe. According to this model, spirituality is a factor that influences all adaptive behavior. (Roy, 2018)

Spiritual care can help individuals to adapt caused by functional changes in the body. Spirituality has several dimensions including values with oneself (relationship with self), relationships with others (relationships with others), relationships with the environment (harmony with nature), and relationships with God the Creator (relationship with the higher power). Spiritual care directs individuals to form adaptive coping by accepting illness, fostering belief in God's power, increasing compliance with medication, and motivating individuals to be active in social interactions. The higher an individual's spiritual level, the better their ability to adapt. (Yilmaz & Kara, 2020)

According to Callista Roy's adaptation theory, there are 4 adaptation elements that help the adaptation process, one of which is the human element, humans as an adaptive system that has cognator and regulator control mechanisms to maintain adaptation. (Huda, 2022) Based on this theory, the spiritual care model, such as prayer activities, is an adaptive strategy that is included in the cognator control mechanism. (Huda, 2022) Praying to Allah SWT is a method of inner relief that will restore peace of mind to the individual who does it. (Firda Ayu Wahyuni, 2014) Individuals who draw closer to the Creator will also receive guidance about the values and meaning of life, so it is hoped that the anxiety experienced by individuals will gradually decrease during treatment.

Spiritual care is an intervention given through sound impulses or stimulation that will be received by the hearing ear. The sound is transmitted through the ossicles in the middle ear, and through the cochlear fluid, traveling to the inner ear, namely the basilar membrane of the cochlea which is a resonance area and contributes to varying vibration frequencies. The cilia hairs as sensory receptors will convert the vibration frequency into electrical vibrations which will connect directly to the tip of the auditory nerve (N.VII). (Indriyati et al., 2021) The auditory nerve will transmit signals to the auditory cortex in the temporal lobe. The primary auditory cortex receives input and perceives the sound that is heard, then sends signals to the thalamus and Prefrontal Cortex (PFC) so that it will influence the perception to be positive. Positive perceptions will influence the amygdala which will continue to the hypothalamus to produce Corticotropin Releasing Factor (CRF). CRF will stimulate the hyphophysis gland to secrete endorphins and serotonin as neurotransmitters which influence the mood to relax. (Chaieb et al., 2015)

Anxiety is closely related to meaningless life related to physical and mental changes. Individuals are said to have a meaningful life if they have life satisfaction, freedom of will, a positive attitude towards death, do not have thoughts about suicide, and feel worthy of living. (Wijayanti et al., 2017) The meaning of life cannot be given by other people, but must be sought, guarded and found by the individual concerned. The meaning of life as a protective measure is most important for avoiding anxiety. According to Durnus (2022) explains that to get a meaningful life by having life principles, career, material things, harmony with nature, creativity, a healthy life and spiritual beliefs or values. (Durmus & Durar, 2022)

One method for strengthening beliefs and spiritual values is using the spiritual emotional freedom technique (SEFT) . SEFT is a therapeutic technique that combines the body's energy system (energy medicine) and spiritual therapy which is used to overcome emotional and physical problems, namely by doing light tapping. (tapping) at certain points on the body. (Septiani & Siregar, 2022) SEFT uses stimulation in the form of light tapping or tapping on acupoints. During tapping, there is an increase in the process of neurotransmitter signals that reduce the regulation of the hypothalamic-pitutiary-adrenal axis (HPA axis), thereby reducing the production of stress hormones, namely cortisol, heart rate, high blood pressure, and decreased muscle tension. (Church, 2009) SEFT can contribute to increasing gratitude by recognizing God's blessings, accepting God's blessings, and praising God for the blessings given, this is a form of individuals being able to make meaning of their lives. A life filled with gratitude can lead to happiness. (Elfanany, 2013)

Spiritual care involves elements of relationships with fellow humans, fellow humans need each other's help and support. A harmonious interaction relationship will foster self-confidence in facing all difficulties. Respondents experienced a lack of confidence when meeting other people, felt unable to help others, and closed themselves off from their environment and limited their social interactions. Limited social interaction will cause loneliness, anxiety and depression. (Wickramaratne et al., 2022)

Social interactions are very important to consider because they affect physical, mental and social functioning. Previous research conducted by Kuczynski , (2021) found that connected social interactions can protect patients from depressed mood and mental health disorders because patients feel appreciated and

loved by their existence, this can encourage patient optimism in achieving recovery. (Kuczynski et al., 2022) Social interactions require family support. Family support will help stroke patients adapt to physical and psychological changes. Forms of family support can be informational, instrumental, emotional and appreciation. The active role of the family in assisting the implementation of ROM can increase patient motivation. This is because the closer the family relationship, the more enthusiastic the patient will be. (Manurung, 2017) Family support is very necessary for stroke patients to increase participation in rehabilitation programs, reduce psychological tension and stabilize the emotions of ischemic stroke patients. (I Gede Andre Putra Rio et al., 2019)

The implementation of spiritual care is supported by the characteristics of respondents who are predominantly Javanese, the Javanese principle "nrima ing pandum" means accepting whatever is given by God to humans. Every human being needs to have an attitude of surrender to accept whatever has been ordained by God. Humans need to have gratitude in order to accept whatever has been determined by Almighty God. If individuals are able to always be grateful, then their lives will become easier. (Casmini, 2020) This is in accordance with the words of Allah SWT in Surah Al Baqarah verse 155-156 explaining "And indeed We will give you trials with fear and hunger, lack of wealth, souls and fruits. And give good news to those who are patient, namely those who, when a disaster strikes them, say: "Indeed, we belong to Allah and to Him we will return. The majority of respondents are Javanese so that the respondents' perspectives on anxiety are not too different, therefore the researcher recommends that it is important to look at perspectives on anxiety from other ethnic groups.

Spiritual care as a process of effort and trust is carried out by completely surrendering oneself to God and expecting rewards from Him. Ischemic stroke patients become more compliant with the treatment program, are motivated to be able to take care of themselves, grow hope for recovery, increase self-esteem, worry and anxiety are reduced. (Oshvandi et al., 2022) Spiritual care in its implementation is influenced by the patient's spiritual depth, the more the patient has a high level of spirituality, the more he can control his anxiety. (Widyastuti et al., 2020) Based on these findings, further research needs to consider the patient's level of spiritual depth. According to Clark (2020), spiritual strengthening can increase belief in the greatness of God so that individuals carry out their daily activities more calmly and relaxed. (Clark & Emerson, 2020) Spiritual care can also make patients accept their condition, feel comfortable, and can be a facility to bring patients to a peaceful state.

CONCLUSION

This research shows that the spiritual care model using Callista Roy's adaptation theory approach is effective in reducing anxiety in ischemic stroke patients. The results showed a significant reduction in anxiety levels in the intervention group compared to the control group. Providing spiritual care interventions helps patients develop strong spiritual beliefs, adapt to physiological and psychosocial changes caused by stroke, and increase adherence to treatment and participation in social activities. Callista Roy's adaptation model which integrates elements of spirituality helps patients find meaning in life and optimism, which is important for the recovery process and quality of life of stroke patients.

Suggestion

1. Application of the Spiritual Care Model in Hospitals:
   a. Hospitals, especially stroke units, need to integrate the spiritual care model with Callista Roy's adaptation theory approach in stroke patient rehabilitation programs.
   b. Nurses and other health professionals should be provided with specific training regarding the application of this model to ensure the effectiveness of the intervention.
2. Spiritual Care Program Development:
   a. Spiritual care programs must be tailored to individual patient needs, including paying attention to aspects of the patient's culture and beliefs.
   b. Further development of the spiritual care model should include comprehensive guidance and training modules to facilitate implementation in a variety of health care settings.
3. Family and Community Support:
   a. Involve the family in the care process to support the patient's biopsychosocial adaptation.
   b. Community support programs also need to be developed to help ischemic stroke patients adapt and improve their quality of life.

4. Advanced Research:
   a. Further research is needed to explore the long-term effects of this model of spiritual care.
   b. Studies also need to be conducted to assess the effectiveness of this model in various settings and broader patient populations.
5. Continuous Evaluation and Adjustment:
   Regular evaluations of spiritual care programs should be conducted to assess effectiveness and make necessary adjustments based on feedback from patients and healthcare professionals.

By implementing and developing an appropriate spiritual care model, it is hoped that anxiety in ischemic stroke patients can be reduced, so that the recovery process can run more effectively and the patient's quality of life will increase.

REFERENCE

Abazarian, E., Baboli, M.T., Abazarian, E., & Ghashghaei, F.E. (2015). The effect of problem solving and decision making skills on tendency to depression and anxiety in patients with type 2 diabetes. Advanced Biomedical Research, 4(1), 3–4. https://doi.org/10.4103/2277-9175.157830

Afshar, M., Sadat, Z., & Bagheri, M. (2021). The effect of spiritual counseling on hope in patients with multiple sclerosis: A randomized clinical trial. International Journal of Community Based Nursing and Midwifery, 9(4), 319–322. https://doi.org/10.30476/ijcbnm.2021.88605.1523

Akbari, S., Pazokian, M., Shirin, A., Farahani, A., Nasiri, M., & Rajab, A. (2020). Investigating the effect of spiritual care on the hope of diabetic patients referred to the Iranian Diabetes Association: A clinical trial. Archives of Pharmacy Practice, 11, 124–130. https://archivepp.com/storage/models/article/vrM1FqYAAH9Q11ys1xH3c6AFxTdRFUdlVoIosUa9B98wkrkC3RSRxqLrrZF2/investigating-the-effect-of-spiritual-care-on-the-hope-of-diabetic-patients-referred-to-the-irania.pdf

Alligood, M.R. (2017). Nursing theorists and their work (AYS Hamid & K. Ibrahim, Eds.; 8th ed .). Elsevier Ltd.

Amini, K., Tahrekhani, M., Abbas-alamdari, Z., & Faghihzadeh, S. (2020). The effect of spiritual care on anxiety about death in patients with gastrointestinal cancer undergoing chemotherapy: A randomized controlled trial. European Journal of Integrative Medicine, 36, 1–6. https://doi.org/10.1016/j.eujim.2020.101117

Anderson, S. C. (2019). The global burden of stroke: Persistent and disabling. The Lancet Neurology, 18, 439. https://doi.org/10.1016/S1474-4422(19)30030-4

Australian Institute of Health and Welfare. (2018). Australia's health (Issue 16). https://doi.org/10.25816/5ec1e56f25480

Bussing, A., & Koenig, H. G. (2010). Spiritual needs of patients with chronic diseases. Religions, 1(1), 21–25. https://doi.org/10.3390/rel1010018

Casmini. (2020). Javanese healthy personality (1st ed .). Gift of the Universe.

Chaieb, L., Wilpert, E.C., Reber, T.P., & Fell, J. (2015). Auditory beat stimulation and its effects on cognition and mood states. Frontiers in Psychiatry, 6(MAY), 1–9. https://doi.org/10.3389/fpsyt.2015.00070

Chau, J.P.C., Thompson, D.R., Twinn, S., Chang, A.M., & Woo, J. (2009). Determinants of participation restriction among community dwelling stroke survivors: A path analysis. BMC Neurology, 9(49), 1–7. https://doi.org/10.1186/1471-2377-9-49

Chun, HYY, Whiteley, WN, Dennis, MS, Mead, GE, & Carson, AJ (2018). Anxiety after stroke: The importance of subtyping. Stroke, 49(3), 556–564. https://doi.org/10.1161/STROKEAHA.117.020078

Church, D. (2009). The effect of EFT (Emotional Freedom Techniques) on athletic performance: A randomized controlled blind trial. The Open Sports Sciences Journal, 2(1), 94–99. https://doi.org/10.2174/1875399x00902010094

Clark, M., & Emerson, A. (2020). Spirituality in psychiatric nursing: A concept analysis. Journal of the American Psychiatric Nurses Association, 27(1), 1–10. https://doi.org/10.1177/1078390320902834

Dennis, M., Mead, G., Forbes, J., Graham, C., Hackett, M., Hankey, G.J., House, A., Lewis, S., Lundström, E., Sandercock, P., Innes , K., Williams, C., Drever, J., Mcgrath, A., Deary, A., Fraser, R., Anderson, R., Walker, P., Perry, D., … Hungwe, R. (2019). Effects of fluoxetine on functional outcomes after

acute stroke (FOCUS): A pragmatic, double-blind, randomized, controlled trial. The Lancet, 393, 272–273. https://doi.org/10.1016/S0140-6736(18)32823-X

Dharma, KK, Nurbani, N., Wardhani, P., Rangkuti, WF, Rahayu, H., & Kapadia, R. (2022). The factors that influence the adaptation process 6 months after a stroke: A path analysis. Enfermería Clínica (English Edition), 1–8. https://doi.org/10.1016/j.enfcle.2022.06.003

Durmus, M., & Durar, E. (2022). The relationship between spiritual well-being and fear of COVID-19 in individuals with chronic disease during the COVID-19 outbreak. Spiritual Psychology and Counseling, 7(1), 37–53. https://doi.org/10.37898/spc.2022.7.1.159

Elfanany, B. (2013). The powerful secret behind the miracle of patience, gratitude, & prayer (1st ed .). Pinang Merah Publisher.

Firda Ayu Wahyuni. (2014). The relationship between fulfilling spiritual needs and motivation for healing in inpatients at Ibnu Sina YW-Umi Hospital Makassar. In Alauddin Makassar State Islamic University (1st ed., Vol. 53, Issue 9, p. 74). UIN Alauddin.

Gandana, RS, & Kariasa, IM (2017). Physical disability and self-concept of stroke patients in the Budhi Asih Hospital, Indonesia. UI Proceedings in Health Medicine, 3, 47–49. https://doi.org/10.7454/UIPHM.V3I1.192

Ghorbani, M., Mohammadi, E., Aghabozorgi, R., & Ramezani, M. (2020). The effect of applying spiritual care model on well-being and quality of care in cancer patients. Supportive Care in Cancer, 29(5), 2749–2760. https://doi.org/10.1007/s00520-020-05781-7

Góes, MGO de, & Crossetti, M. da G. de O. (2020). Developing a spiritual care model for patients and their relatives in illness. Revista Gaúcha de Enfermagem, 41, 1–10. https://doi.org/10.1590/1983-1447.2020.20190150

Haghparast, A., Tabatabaei, H.S., Ghanbari, N., & Maleki, L. (2021). The effect of the spiritual care model based on the righteous heart on the post-traumatic stress of veterans in 2019. Teikyo Medical Journal, 44(02), 859–867.

Huda, MM (2022). Deep breathing and dhikr relaxation intervention for the anxiety of hypertensive elderly using Roy's adaptation model theoretical approach. Journal of Nursing, 14(1), 207–218. https://doi.org/10.32583/kebesar.v14i1.34

I Gede Andre Putra Rio, Ilsa Hunaifi, & Pujiarohman. (2019). The relationship between social support and self-acceptance in post-stroke patients. Journal of Medicine, 8(2), 29–33. https://doi.org/10.29303/jku.v8i2.340

Indriyati, Herawati, VD, Sutrisno, & Putra, FA (2021). The effect of complementary therapy by listening to Al-Qur'an murotals on anxiety levels in final year students who are writing their theses during the Covid-19 pandemic. URECOL, 6(3), 997–1011. https://doi.org/10.32504/hspj.v6i3.743

Indonesian Ministry of Health, Health Research and Development Agency. (2018). Riskesdas 2018 national report. Indonesian Ministry of Health, Health Research and Development Agency. https://kesmas.kemkes.go.id/assets/upload/dir_519d41d8cd98f00/files/Hasil-riskesdas-2018_1274

Kennedy, P. (Ed.). (2007). Psychological management of physical disabilities: A practitioner's guide. Taylor & Francis e-Library. www.eBookstore.tandf.co.uk

Khalajinia, Z., Tehran, H. A., & Heidari, A. (2021). Explaining the perception of spiritual care from the perspective of health personnel: A qualitative study. Journal of Education and Health Promotion, 10(53), 1–6. https://doi.org/10.4103/jehp.jehp_599_20

Knapp, P., Dunn-Roberts, A., Sahib, N., Cook, L., Astin, F., Kontou, E., & Thomas, S. A. (2020). Frequency of anxiety after stroke: An updated systematic review and meta-analysis of observational studies. International Journal of Stroke, 1–12. https://doi.org/10.1177/1747493019896958

Kroeders, R., Bernhardt, J., & Cumming, T. (2013). Physical inactivity, depression and anxiety in acute stroke. International Journal of Therapy and Rehabilitation, 20(6), 289–293. https://doi.org/10.12968/ijtr.2013.20.6.289

Kuczynski, A.M., Halvorson, M.A., Slater, L.R., & Kanter, J.W. (2022). The effect of social interaction quantity and quality on depressed mood and loneliness: A daily diary study. Journal of Social and Personal Relationships, 39(3), 734–756. https://doi.org/10.1177/02654075211045717

Lee, E., Kim, J., Kang, H., Kim, S., Kim, J., Park, M., Cho, K., & Kim, J. (2019). Association between anxiety and functional outcomes in patients with stroke: A 1-year longitudinal study. Korean Neuropsychiatric Association, 1–7. https://doi.org/10.30773/pi.2019.0188

Manurung, M. (2017). Family support with motivation in carrying out ROM in post-stroke patients at RSU HKBP Balige, Toba Samosir Regency. Idea Nursing Journal, VIII(3), 1–7.

Mihardja, L., Bisara, D., Ghani, L., Pangaribuan, L., Teja, T., Irianto, J., Sulistyowati, N., & Senewe, F. (2016). Death rate and risk factors for stroke as the basic causes of death in Padang Pariaman Regency, West Sumatra Province. Health Research Bulletin, 44(4), 232–234. https://doi.org/10.22435/bpk.v44i4.5503.227-236

Mohammad, E. B., & Ahmad, M. (2018). Virtual reality as a distraction technique for pain and anxiety among patients with breast cancer: A randomized control trial. Palliative & Supportive Care, 1–26. https://doi.org/10.1017/S1478951518000639

Mulyani, T., Widianti, E., & Mirwanti, R. (2018). Spiritual well-being of post-stroke patients in Neurological Polyclinic of Al Ihsan Regional Public Hospital, West Java. Indonesian Journal of Nursing Education, 4(1), 42–51. https://doi.org/10.17509/jpki.v4i1.12341

Musser, B., Wilkinson, J., Gilbert, T., & Bokhour, B. G. (2015). Changes in identity after aphasic stroke: Implications for primary care. International Journal of Family Medicine, 8. https://doi.org/10.1155/2015/970345

Nursalam. (2003). Concepts and application of nursing science research methodology: Guidelines for theses, theses and nursing research instruments (2nd ed .). Salemba Medika.

Oshvandi, K., Torabi, M., Khazaei, M., Khazaei, S., & Yousofvand, V. (2022). Impact of hope on stroke patients receiving a spiritual care program in Iran: A randomized controlled trial. Journal of Religion and Health, 1(1), 356–369. https://doi.org/10.1007/s10943-022-01696-1

Parke, H.L., Epiphaniou, E., Pearce, G., Taylor, S.J.C., Sheikh, A., Griffiths, C.J., Greenhalgh, T., & Pinnock, H. (2015). Self-management support interventions for stroke survivors: A systematic meta-review. PLOS ONE, 10(7), 17–20. https://doi.org/10.1371/journal.pone.0131448

Prasetyaningrum, E., & Advistasari, YD (2018). Study of the drugs fluoxetine and sertraline for patients with severe depression at the inpatient installation of RSJD Dr. Amino Gondohutomo Central Java Province for the period July-December 2016. Exact Scholar, 3, 41–42. https://publikasiilmiah.unwahas.ac.id

Roy, C. (2018). Spirituality based on the Roy Adaptation Model for use in practice, teaching and research. Aquichan, 18(4), 393–394. https://doi.org/10.5294/aqui.2018.18.4.1

Salamizadeh, A., Mirzaei, T., & Ravari, A. (2017). The impact of spiritual care education on the self-efficacy of the family caregivers of elderly people with Alzheimer's disease. International Journal of Community-Based Nursing and Midwifery, 5(3), 231–238. https://pdfs.semanticscholar.org/d75b/106243afc2e45d43b492a6a332ddbee171c8.pdf

Sastroasmoro, S., & Ismail, S. (2014). Fundamentals of clinical research methodology (5th ed .). Sagung Seto.

Septiani, LD, & Siregar, T. (2022). Spiritual emotional freedom technique (SEFT) therapy to overcome work stress as a nurse. Complementary Nursing, 01(01), 1–15.

Skolarus, L., Lisabeth, L.D., Sánchez, B.N., Smith, M.A., Garcia, N.M., Risser, J., & Morgenstern, L.B. (2010). The prevalence of spirituality, optimism, depression, and fatalism in a bi-ethnic stroke population. Journal of Religion and Health, 51, 1293–1305. https://doi.org/10.1007/s10943-010-9438-4

Stahl, S. M. (2013). Stahl's essential psychopharmacology: Neuroscientific basis and practical applications (4th ed .). Cambridge University Press. https://www.academia.edu/28259406/Stahls_essential_psychopharmacology_4th_edition_stephen_stahl

Sugiyono. (2013). Statistics for research. Alphabet.

Sugiyono. (2018). Combined research methods (mixed methods) (Sutopo, Ed.; 10th ed .). Alphabet.

Vismara, M., Girone, N., Cirnigliaro, G., Fasciana, F., Vanzetto, S., Ferrara, L., Priori, A., D'Addario, C., Viganò, C., & Dell' Osso, B. (2020). Peripheral biomarkers in DSM-5 anxiety disorders: An updated overview. Brain Sciences, 10(8), 1–37. https://doi.org/10.3390/brainsci10080564

Wickramaratne, P.J., Yangchen, T., Lepow, L., Patra, B.G., Glicksburg, B., Talati, A., Adekkanattu, P., Ryu, E., Biernacka, J.M., Charney, A., Mann, J.J. , Pathak, J., Olfson, M., & Weissman, M. M. (2022). Social connectedness as a determinant of mental health: A scoping review. PLOS ONE, 1–30. https://doi.org/10.1371/journal.pone.0275004

Widyastuti, M., Hastuti, P., Kirana, SAC, & Farendita, NH (2020). The correlation of spiritual status and anxiety level in patients with pulmonary tuberculosis. Nursing Journal, 15(2), 67–71. https://doi.org/10.20473/jn.v15i1Sp.18946

Wijayanti, L., Haryanto, J., & Suharto. (2017). The effects of spiritual care on depression and meaning in life in the clients with kidney failure receiving hemodialysis at Islamic Hospital Surabaya. International Journal of Science and Research (IJSR), 6(7), 247–251. https://doi.org/10.21275/art20174828

World Stroke Organization. (2019). Global stroke fact sheet. World Stroke Organization. www.world-stroke.org

Yao, M., Chen, J., Jing, J., Sheng, H., Tan, X., & Jin, J. (2017). Defining the rehabilitation adherence curve and adherence phases of stroke patients: An observational study. Patient Preference and Adherence, 11, 1435–1441. https://doi.org/10.2147/PPA.S139854

Yilmaz, CK, & Kara, F. Ş. (2020). The effect of spiritual well-being on adaptation to chronic illness among people with chronic illnesses. Perspectives in Psychiatric Care, 1–8. https://doi.org/10.1111/ppc.12566

Yusuf, A., Nihayati, HE, Iswari, MF, & Okviasanti, F. (2016). Spiritual needs: Concepts and applications in nursing care. Media Discourse Partners.

Zou, C., Ding, X., Flaherty, J. H., & Dong, B. (2013). Clinical efficacy and safety of fluoxetine in generalized anxiety disorder in Chinese patients. Neuropsychiatric Disease and Treatment, 9, 1666–1668. https://doi.org/10.2147/NDT.S38899