

The Influence of Spirituality on Psychological Resilience and Recurrence in Hypertension Patients

Faisal Amir^{1*}, Lantin Sulistyorini², M. Hasinuddin³

¹Department of Mental Health Nursing, Nursing Study Program, Ngudia Husada School of Health, Madura, Indonesia; faisalnhm6@gmail.com (Corresponding Author)

²Department of Pediatric Nursing, Faculty of Nursing, Universitas Jember, Indonesia

³Department of Pediatric Nursing, Nursing Study Program, Ngudia Husada School of Health, Madura, Indonesia

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ABSTRACT

Hypertension is a chronic disease that is prone to recurrence and disrupts the balance of systemic hemodynamics to cause various serious multi-system complications. This study aimed to analyze the spiritual level in the regulation of resilience and relapse in hypertensive patients. We used a correlation analysis method with a cross-sectional approach. The population was 76 patients who were recorded as coming to the Puskesmas with a sample size of 62 respondents who were taken by simple random sampling. The independent variable was spirituality, as measured using the Daily Spiritual Experience Scale (DSES). The dependent variable was resilience as measured by the Nicholson–McBride Resilience Questionnaire (NMRQ) and hypertension recurrence. Statistical tests using Spearman's rank with alpha (α) 0.05. The results of the statistical tests show a significant relationship between spirituality and resilience. The p-value obtained is 0.001 less than 0.05, with a level of closeness of 0.790 or solid. Spirituality is also significantly related to hypertension recurrence with a p-value of 0.011, smaller than alpha 0.05, and a level of closeness of -0.325, which means a moderate level of closeness. Deep spirituality will trigger the strengthening of resilience that regulates the balance of stress and homeostasis of the sympathetic and parasympathetic nervous systems. The physiological sympathetic and parasympathetic systems regulate vascular smooth muscle contractions to control blood pressure and reduce the rate of hypertensive recurrence.

Keywords: spirituality; resilience; hypertension; hypertensive recurrence

INTRODUCTION

Hypertension is a chronic disease that is prone to recurrence, disrupting the balance of systemic hemodynamics, and causing various serious multi-system complications. Hypertension (HTN) is defined as a blood pressure higher than a diastolic blood pressure of 90 mmHg or a systolic blood pressure of 140 mmHg in the general population. Hypertension affects over a billion people worldwide, making it a major public health problem (Solomon et al., 2023; Suvila et al., 2020). To date, hypertension remains a major modifiable risk factor for cardiovascular disease (CVD) in all age groups. Primary hypertension is now considered a syndrome rather than a disease caused and characterized by elevated blood pressure (Manosroi & Williams, 2019). Psycho-biologically, hypertension is influenced by coping mechanisms, one of which is the level of individual psychological resilience. Resilience according to the American Psychological Association (2011) is a person's defense mechanism to adapt and remain strong in every difficulty, overcome stress and trauma, and bounce back from crisis conditions (Ong et al., 2018; Jiang et al., 2024). Resilience as a coping defense not only regulates psychological balance, but also affects physiological balance. Coping techniques can include practical strategies such as finding alternative solutions, working with co-workers, using humor to relieve stress, adapting to different situations, and seeking social support from family and related organizations (Kurniyawan et al., 2023).

Data on hypertension sufferers worldwide are estimated to reach approximately 1.28 billion with an age range between 30 and 79 years, especially in middle- and lower-income countries. Approximately 46% of people with hypertension do not realize that they have hypertension, and approximately 42% of people have been diagnosed and treated (WHO, 2021). In 2000, approximately 25% of adults worldwide had HTN, and by 2025, that number is expected to increase to 30% (Zekewos et al., 2019). Data on people with high blood pressure or hypertension worldwide is estimated

to reach 1.13 billion with a distribution of cases where 1 in every 4 men and 1 in every 5 women is diagnosed with hypertension (Mills et al., 2020). Patients with hypertension, according to the Indonesian Basic Health Research report in 2018, are estimated to have increased from 25.8% in 2013 to 34.1% in 2018 of the total adult population in Indonesia (Kurnianto et al., 2020; Oktamianti et al., 2022). Preliminary studies on hypertensive patients who came to cheque themselves in March 2023 found that 6 out of 10 patients complained of frequent dizziness, 5 complained of frequent aches and weakness, and 7 complained of frequent chest palpitations. Meanwhile, 4 of 10 patients complained that their chest felt heavy, especially when stressed and tired. This data shows that the recurrence rate in hypertensive patients in the Bangkalan Health Centre Working Area, Bangkalan Regency is quite high.

Hypertension as a chronic disease is characterized by severe headaches, chest pain, dizziness, difficulty breathing, nausea, vomiting, vision changes, anxiety, confusion, and abnormal heart rhythm (WHO, 2021). All of these symptoms are also markers of recurrence in hypertensive patients. If hypertension and its recurrence cannot be appropriately managed, it can lead to disruption in daily living activities. In addition, if it is progressive, it can lead to various complications, especially those related to cardiovascular disease (Al Ghorani et al., 2022) and is considered the main causative factor in many cardiovascular diseases (Fuchs & Whelton, 2020). Other complications that are multi-organ disorders caused by hypertension are stroke, ischaemic heart disease, other vascular diseases, and renal disease and trigger mortality in all of these complications (Zhou et al., 2021). In addition, psychological distress factors such as anxiety and depression are also predisposing factors that can increase the risk and aggravate complications of hypertension to coronary heart disease (de Hartog-Keyzer et al., 2022). The low resilience of a person suffering from hypertension can also be a factor that worsens mental health and reduces the quality of life of hypertensive patients.

Guidelines for the management of hypertension according to the American College of Cardiology/American Heart Association) cover almost all aspects of diagnosis, evaluation, monitoring, secondary causes, and pharmacological and nonpharmacological treatment (Flack & Adekola, 2020). Non-pharmacological treatment can be done using a healthy lifestyle, including a healthy diet, good sleep habits, mental relaxation and rest, and avoiding caffeine, tobacco, alcohol, and stress (Lestari et al., 2023). One of the nonpharmacological treatments is spirituality, which can influence coping regulation and positive compensation of the body during pathogenesis. Spirituality includes an awareness of the religious and helps to develop meaning in life and self-confidence to cope with challenges (Salman & Lee, 2019). Spirituality is a way for people to find meaning, hope, and peace. Some people find it through religion, music, art, life, values, and principles (Kurniyawan et al., 2023). Spirituality is an important factor in regulating individuals' resilience formation (Manning et al., 2019). Amir et al. (2018) explained that dhikr is a key factor in the regulation of resilience in individuals (Manning et al., 2019). This study aimed to analyze the spiritual level in the regulation of resilience and relapse in hypertensive patients.

METHOD

This study uses a correlation analysis method with a cross-sectional approach. The concept of correlation analytics seeks to analyze the magnitude of a variable that affects the magnitude of another variable and the value of the relationship between variables (Schober et al., 2018; Senthilnathan, 2019). A cross-sectional approach can be used in this method by observing and collecting data on a population at one time without any intervention (Wang & Cheng, 2020). This research has passed the ethical feasibility test at the STIKes Ngudia Husada Madura Health Research Ethics Commission institution with certificate number No.1244/KEPK/STIKES-NHM/EC/IV/2022. Data was collected in the Bangkalan Health Centre Working Area, Bangkalan Regency - Indonesia community. The population comprised 76 patients recorded as coming to the Puskesmas until May 25, 2023. According to the calculation formula, the sample size of 62 respondents was taken using simple random sampling. The independent variable in this study was spirituality, as measured using the Daily Spiritual Experience Scale (DSES). The dependent variable in this study is resilience, as measured using the Nicholson-McBride Resilience Questionnaire (NMRQ) as a psychological variable. The following independent variable was hypertension recurrence, measured using a recurrence questionnaire and interviews with respondents. The collected data were then subjected to both univariate and bivariate statistical tests. The bivariate test in this study used the Spearman ranks test with a significance level of alpha (α) 0.05 to determine the relationship between variables.

RESULT

The study's results comprised general data describing the frequency distribution of respondents based on gender, age, education, and daily work. Other data that will be presented are cross-tabulation and statistical test results used to analyze the relationship between spirituality and resilience and the relationship between spirituality and relapse in hypertensive patients.

Table 1. Frequency Distribution of Respondents based on Gender, Age, Education Level, and Occupation in the Bangkalan Health Centre Working Area, Bangkalan Regency (n=62)

Variable	Frequency	Percentage
Gender		
Female	42	67.7
Male	20	32.3
Age		
40 – 50 years	17	27.4
51 – 56 years	16	25.8
57 – 65 years	22	35.5
> 66 years	7	11.3
Education Level		
Elementary (SD/SMP)	23	37.1
Secondary (SMA / SMK)	27	43.5
Higher Education (D3 - S3)	12	19.4
Occupation		
Housewife	22	35.5
Civil Servants/Military/	10	16.1
Self-employed	15	24.2
Farmer/Fisherman	15	24.2

Table 1. The data shows that most of the study respondents were female, with 42 respondents or about 67.7% of the total respondents. These data show a tendency for hypertension to be more common in women because of various factors. A study explains that hypertension is mainly suffered by women from adolescents to the elderly due to risk factors, pregnancy, oral contraceptive use, breastfeeding phase, menopause or hormones, hypertension in elderly women, and racial and ethnic issues (Wenger et al., 2018).

The age range of the most respondents in this study was 57 - 65 years with 22 respondents or almost half, namely 35.5%. Hypertension generally occurs in individuals in the age range of late adulthood towards the elderly with suboptimal management and control (Altschul et al., 2019). This may occur along with the aging process and cellular degeneration as individuals age.

The highest level of education of respondents is secondary education, totaling 27 respondents or almost half, namely 43.5%. Education level will be related to the knowledge, attitudes, and behaviour of individuals in understanding the causes, processes, and management of hypertension.

Almost half of the respondents were housewives, with 22 respondents or approximately 35.5% of the total respondents. The profession is related to physical activity, which affects blood pressure control. A previous study reported a significant correlation between walking, moving, or exercising, daily physical activity levels, and depressive symptoms (Nakazato et al., 2021). Occupation is related to the energy expended in activity.

Table 2. The Relationship between Spirituality and Resilience in the Bangkalan Puskesmas Work Area, Bangkalan Regency

		Resilience				Total	p-value	r
		Developing	Established	Strong	Exceptional			
Spirituality	Low	5 (8.1%)	0 (0%)	1 (1.6%)	0 (0%)	6 (9.7%)	0.001	0.790
	Medium	1 (1.6%)	22 (35.5%)	2 (3.2%)	0 (0%)	25 (40.3%)		
	High	0 (0%)	2 (3.2%)	19 (30.6%)	1 (1.6%)	22 (35.5%)		
	Very High	0 (0%)	1 (1.6%)	1 (1.6%)	7 (11.3%)	9 (14.5%)		
Total		7 (11.3%)	24 (38.7%)	23 (37.1%)	8 (12.9%)	62 (100%)		

*Spearman Ranks Test, alpha=0.05

Table 2 shows the results of statistical tests using Spearman Ranks, where the p-value obtained is 0.001 less than alpha. This means that in this case, there was a relationship between spirituality and resilience of hypertensive patients in the Bangkalan Puskesmas Working Area, Bangkalan Regency. The level of closeness of the relationship is indicated by the correlation coefficient value of 0.790, meaning that the level of closeness is solid with a positive correlation. A positive correlation means that the higher a person’s spirituality, the higher the strengthening of resilience felt by the patient.

Table 3. The Relationship Between the Meaning of Spirituality and the Level of Psychological Distress in the Bangkalan Puskesmas Work Area, Bangkalan Regency

		Hypertension Recurrence				Total	p-value	r
		Mild	Moderate	Very	Heavy			
Spiritual	Low	0 (0%)	1 (1.7%)	2(3.2%)	3 (4.8%)	6 (9.7%)	0.011	-0.325
	Medium	1 (1.7%)	7 (11.3%)	11 (17.7%)	6 (9.7%)	25 (40.3%)		
	High	2 (3.2%)	9 (14.5%)	7 (11.3%)	4 (6.5%)	22 (35.5%)		
	Very High	2 (3.2%)	3 (4.8%)	4 (6.5%)	0 (0%)	9 (14.5%)		
Total		5 (8.1%%)	20 (32.3%)	24 (38.7%)	13 (21%)	62 (100%)		

*Spearman Ranks Test, alpha=0.05

Table 3 shows the results of statistical tests using Spearman Ranks, where the p-value obtained is 0.011 less than the alpha. This means that in this case, there was a relationship between spirituality and the recurrence of hypertensive patients in the Bangkalan Puskesmas Working Area, Bangkalan Regency. The level of closeness of the relationship is indicated by the correlation coefficient value of -0.305, which means that the level of closeness is moderate with a negative correlation where the higher the spirituality, the lower the recurrence of hypertension felt by the respondents in this study.

DISCUSSION

The results showed that spirituality was significantly correlated with improved resilience and relapse in patients with a p-value of 0.001 and a p-value of 0.011 less than 0.05. Spirituality is a critical dimension in human life where the basis of holistic energy comes from something mysterious in one’s spiritual experience. Spirituality is believed to be a dimension that affects both psychologically, socially, and biologically. Spirituality can be translated as a positive belief that contains values, principles, meaning of life, purpose of life, and beliefs related to physical and mental health and is very beneficial for individuals to survive in life (Salari et al., 2020). Spirituality is mainly associated with the highest entity in life, God. A person’s faith in God provides energy to overcome difficulties, improve physical and mental health, and increase life expectancy (Rias et al., 2020). Good spirituality facilitates positive coping changes expressed in the form of psychological resilience. Spirituality, in addition to being associated with increased resilience, is also likely to encourage better recovery in the management of heart surgery (Curcio et al., 2022). Spirituality, as the most transcendent side, allegedly can provide energy and increase life satisfaction, mental health, and physical health, which may be bridged by good resilience. In the study, spirituality is positively related to resilience with a degree of closeness of 0.790, which means the relationship between the two variables is strong.

Resilience is a coping mechanism that allows individuals to survive and recover from difficult physical and psychological pressures. Staudinger et al. (1995) explicitly defined resilience as an individual’s ability to avoid negative things and risk factors that might threaten one’s health (Hayden et al., 2019). Resilience is related to the ability of personal control and optimism that helps individuals adapt positively to both physical and psychological stress (Dantzer et al., 2018). A study reported that resilience positively correlates with decreased distress as a psychological pressure aggravating the disease (Song et al., 2022). Resilience processes various negative stimuli or stressors so individuals can psychologically survive and bounce back from adversity (Bhatnagar, 2021). Several studies have reported the importance of resilience in overcoming psychological distress, especially when resilience is initiated by good spiritual meaning (Shechter et al., 2020; Killgore et al., 2020; Houle et al., 2021; Lentz et al., 2021). Even with its implementation, resilience can reduce levels of stress, anxiety, and depression and improve the quality of life in MS patients (Giovannetti et al., 2022). Thus, there is a tendency in this study that stress resilience is related to hypertension relapse, which is mediated by stress balance.

Other mechanisms in the vascular and blood pressure regulatory pathways will biologically respond to well-regulated stress. Stress is a complicated state related to homeostasis disturbances, overactivity of the sympathetic nervous system, and hypothalamus–pituitary–adrenal axis responses (Imani et al., 2019). Specifically, negative stress (distress) affects an increase in sympathetic nervous system activity, a decrease in parasympathetic nervous system

activity, and impaired baroreflex sensitivity that contributes to the acceleration of cardiovascular disease (Fonkoue et al., 2018). When stressed, the paraventricular nucleus of the hypothalamus (PVN) in the hypothalamus also experiences increased activity that affects autonomic blood flow, resulting in increased blood pressure (Elsaafien et al., 2021). In addition, resilience also contributes to changes in vascular contraction, sympathetic nervous system, activation of vasoactive hormones, vascular resistance, cardiac output, and control of all autonomic homeostasis in the human body (Sánchez-Manso et al., 2023; Hall et al., 2024). By strengthening resilience in internal mental events, individuals can improve their adaptation to stress, and the stress response through the sympathetic medullary adrenal (SAM) axis will be balanced. The balance of the SAM axis, which oversees sympathetic and parasympathetic nerve functions, positively affects changes in vascular contractions and blood pressure. Well-controlled blood pressure in hypertensive patients affects relapse rates through compensatory mechanisms and pathophysiological improvements. Physiologically, intrinsic vascular smooth muscle contraction and vasoconstriction contribute to blood pressure control.

CONCLUSION

Spirituality in this study was associated with increased resilience and decreased relapse of hypertension. This occurs because deep spirituality strengthens resilience, which regulates stress balance and homeostasis of the sympathetic adrenal medullary (SAM) system axis. The SAM Axis system balances the sympathetic and parasympathetic systems, adrenergic balance, and nitric oxide to regulate vascular smooth muscle contraction and control blood pressure, thereby reducing the recurrence rate.

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