

# Social Support and Physical Activities on People with Hypertension Aged 45 Years and Above

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Abstract: The blood pressure control through regular physical activities is necessary to prevent complications. Social support is one of the factors that affect the physical activities of people with hypertension. This study aims to identify the correlation between social support and physical activities of people with hypertension. This study used correlational method with the cross-sectional approach. 110 people were chosen as participants using simple random sampling technique. A questionnaire asking about support from family, health workers, and peers, as well as International Physical Activity Questionnaire were used to collect the data. The statistical test conducted was Gamma Correlation Test. Results showed that there was no relationship between family support, health worker support, and peer support with physical activities among people with hypertension aged 45 years and above indicated by the p-value for each variable: 0.655, 0.055, and 0.857. Based on the three p-values, the support from health workers had a p-value close to 0.05. No correlation between social support and physical activities of the people with hypertension signifies that social support has not yet been able to be given adequately to the people with hypertension. Family, health workers, and peers are expected to strengthen their role in controlling the blood pressure of the people with hypertension through physical activities.

## 1 INTRODUCTION

The prevalence of hypertension increases every year (Benjamin *et al.*, 2017). Hypertension is a risk factor for cardiovascular disease. A few complications occur due to hypertension, such as cerebrovascular accident and chronic kidney disease kronik (Latifi *et al.*, 2014). Studies have shown that 30% of patients who died due to heart disease had a history of hypertension (Tereshchenko *et al.*, 2017). Thus, blood pressure control is vital for people with hypertension in order to prevent health complications (Huang *et al.*, 2017)

Steps to control blood pressure on people with hypertension start by engaging regular physical activities. Regular physical activities can reduce systolic and diastolic blood pressure on people with hypertension (Diaz and Shimbo, 2013). Social support is one of the factors that influence someone's physical activity (Ishak *et al.*, 2017). Social support is able to decrease someone's health problems (Xie *et al.*, 2018). Social support plays an important role in health. It can determine an

individual's mental and physical health. Moreover, it also can increase efforts to prevent diseases, mental health disorders, and psychological distress, as well as decrease the number of deaths (Veiel, 1985)

## 2 METHODS

### 2.1 Research Design, Setting and Sample

This study was observational analytical with the cross-sectional approach. The study was conducted in the areas surrounding Puskesmas Turen in Malang Regency with the study population of all patients with hypertension in Turen Sub-District. The research sample was 110 patients with hypertension aged 45 years and older selected using simple random sampling technique.

## 2.2 Data Collection

The research instrument was a questionnaire designed to gather the information from the respondents on demography, social support, and physical activities. Demographic data included age, sex, education, and jobs. In addition, data on the respondents' compliance to blood pressure medication and blood pressure levels measured using sphygmomanometer were collected. Another questionnaire was designed to collect social support data consisting of family support, health worker support, and peer support.

The questionnaire on social support was arranged based on the components of emotional and appreciation supports, instrumental support, and informational support. The questionnaire consisted of questions with answer choices using the Likert scale comprised of four answer choices which were Strongly Disagree, Disagree, Agree, and Strongly Agree. To measure the physical activities of the people with hypertension, *International Physical Activity Questionnaire (IPAQ)* was employed. The total score was categorized into light, moderate, and vigorous. Before data were collected, the respondents were given an explanation of the aim, the significance, and the procedure of the research. The respondents signed the informed consent form to show that they agreed to participate in the study.

## 2.3 Data Analysis

Data analysis was carried out using descriptive analysis technique in the form of frequency distribution to present data on demography, social support, and physical activities. Besides, the

Spearman's rank test was performed to analyze the correlation between social support and physical activities.

## 3 RESULTS AND DISCUSSION

### 3.1 Socio Demographic Data and Health Status

Socio demographic data show that 63.6% of the respondents were between 60 and 74 years old with which the majority were women. 62% attended elementary schools and 40% were unemployed. In regard to health status measured by blood pressure, 65.5% were categorized into hypertension stage I and 34.5% were categorized into hypertension stage II. 35.5% regularly took anti-hypertension medicine, while 64.5% did not.

### 3.2 Social Support and Physical Activities

Data show that 40% of the respondents received adequate family support, while 62.7% received enough support from health workers. Enough support from peers is also seen to be given to 56.4% of the respondents (see Table 2).

Based on the components of emotional and appreciation supports, instrumental support, and informational support, family support had the highest average score. Additionally, informational support had the highest average score on each social support, health worker support, and peer support (see Table 3).

Table 1: Socio demographic data and health status (n=110).

Variable	n (%)	Variable	n (%)
Age (years)		Sex	
45 – 59	33 (30.0)	Male	17 (15.5)
60 – 74	70 (63.6)	Female	93 (84.5)
> 75	7 (6.4)	Marital Status	
Education		Unmarried	1 (0.9)
Didn't go to school	8 (7.0)	Married	107 (99.1)
Elementary	68 (62.0)	Job	
Junior High	22 (20.0)	Private sector	17 (15.5)
Senior High	12 (11.0)	Entrepreneur	18 (16.5)
Consumption of Anti-Hypertension Medicine		Laborer	31 (28.0)
Regularly	39 (35.5)	Unemployed	44 (40.0)
Not Regularly	71 (64.5)		
Hypertension Categories			
Hypertension Stage I	72 (65.5)		
Hypertension Stage II	38 (34.5)		

### 3.3 Relationship between Social Support and Physical Activities

Analysis results of statistical test show that the three types of social support – family support, health worker support, and peer support – had no link with physical activities of the people with hypertension with each p-value 0.655, 0.055, and 0.857. It can be seen that the p-value of the health worker support was close to the meaning of relationship between social support and physical activities (see Table 4).

Blood pressure control on people with hypertension can be done by taking advantage of pharmacological and non-pharmacological therapy approaches. Physical activity is one of the strategies of a non-pharmacological therapy necessary for people with hypertension to prevent an increase in blood pressure and health complications (Han *et al.*, 2014). Results show that 25.5% of people with hypertension performed light physical activities; 44.5% performed moderate physical activities; and 30% performed vigorous physical activities (see Table 2).

Table 2: Frequency distribution of social support and physical activities of the people with hypertension (n=110).

Variable	n (%)	Variable	n (%)
Family Support		Peer Support	
Poor	29 (26.4)	Poor	37 (33.6)
Enough	44 (40.0)	Enough	62 (56.4)
Good	37 (33.6)	Good	11 (10.0)
Health Worker Support		Physical Activities	
Poor	24 (21.8)	Light	28 (25.5)
Enough	69 (62.7)	Moderate	49 (44.5)
Good	17 (15.5)	Vigorous	33 (30.0)

Table 3: Average score of emotional support, appreciation support, instrumental support, and informational support of the people with hypertension (n=110).

Social Support	Average Score of Emotional & Appreciation Supports	Average Score of Instrumental Support	Average Score of Informational Support
Family Support	10.35	10.23	11.03
Health Worker Support	10.09	8.90	10.62
Peer Support	9.58	8.30	9.62

Table 4: Results of Analysis on the Gamma Correlation between Social Support and Physical Activities (n=110).

		Physical Activities			Correlation Coefficient (r)	p-value
		Light	Moderate	Vigorous		
Family Support	Poor	8	12	9	0.059	0.655
	Enough	12	20	12		
	Good	8	17	12		
Total		28	49	33		
Health Worker Support	Poor	8	11	5	0.253	0.055
	Enough	19	28	22		
	Good	1	10	6		
Total		28	49	33		
Peer Support	Poor	11	16	10	0.026	0.857
	Enough	13	28	21		
	Good	4	5	2		
Total		28	49	33		

Regular physical activities will cause peripheral vascular resistance to weaken; thus, blood pressure can be lowered thanks to the neuro hormonal and structural responses as well as the decrease of the sympathetic nerve activities and the increase of arterial lumen diameter (Hamer, 2006). In addition, doing physical activities regularly can prevent people with hypertension from Left Ventricular Hypertrophy (Hegde and Solomon, 2015).

Based on the health status of people with hypertension, 65.5% were fallen into hypertension stage I and the rest 34.5% were categorized into hypertension stage II. Social environment is a resource that mediates the relationship between stress and health. Someone living in a pressuring social environment will experience positive impacts if he or she receives social support. However, poor social support can contribute to someone's mental and physical health disorder (Schaefer, Coyne and Lazarus, 1981). Support is vital for people with hypertension. Good social support from the environment can influence people with hypertension in treatment management for them, including physical activities.

The results of this study suggest that family support had the highest average score compared to health worker support and peer support. Social support, especially from family, with the increase of patients' knowledge will positively affect their self-care behavior (Ishak et al., 2017). (Wulandhani dkk, 2014) argued that family support can be expressed by giving attention, empathy, encouragement, advice, information, and etc. Family support is associated with the development of mental balance and psychological satisfaction. Family members should be prepared to give assistance if needed. Someone who receives family support will feel emotionally calm to be able to feel the attention, advice, and good impression given to them (Azizah, 2011).

Furthermore, Table 3 describes that among three forms of social support, the highest average score was fallen into informational support. Informational support refers to a support by giving information or advice that can help someone solve problems and give feedback on how he or she does it. Feedback can assist someone to maintain his or her social identity and social integrity (Schaefer, Coyne and Lazarus, 1981).

The results of gamma correlation analysis indicate that no link is found between family support, health worker support, peer support, and physical activities among people with hypertension (see Table 4). A few other factors are likely to

contribute to the physical activities of people with hypertension. According to Precede-Proceed model by Lawrence W. Green (1980), someone's health behavior is affected by three factors which are predisposition factor, enabling factor, and reinforcing factor. Predisposition factor includes demographic factor, social structure, and health beliefs. On the other hand, the enabling factor is the facilities that support health care (Notoatmodjo, 2007). Social factor is supposed to be a reinforcing factor. In this study, however, social support has no association with physical activities.

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