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Original Article

Prevalence and Correlation of Knowledge Level with Stress of Patients with Hypertension

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A B S T R A C T

Introduction: High blood pressure causes several complications such as heart failure, kidney failure, stroke, circulation problems and death. Hypertension can be triggered by stress due to activation of the sympathetic nervous system which causes an intermittent increase in blood pressure. Patient's knowledge of hypertension is an important factor in controlling blood pressure and reducing stress levels.
Objective: This study aims to determine the prevalence and correlation of the level of knowledge and stress in people with hypertension.
Methods: This type of research is quantitative analytic with a cross sectional approach. The population in this study were hypertension patients in the Public Health Centre of Cijeungjing working area who were more than 30 years old with a total 101. The research sample was taken as many as 50 respondents with purposive sampling technique. The research instrument used was a questionnaire to measure the level of knowledge of hypertension and the perceived stress scale (PSS-10) as a measure of stress levels. Data were analyzed using SPSS version 20 with Chi Square statistical test.
Results: The results showed that the majority of respondents had more knowledge than the average of 27 people (54%). While the majority of respondents' stress levels were in the medium category, namely as many as 33 people (66%).
Conclusion: Based on the results of the analysis, it is concluded that there is no significant relationship between knowledge and stress levels of hypertensive patients as evidenced by the value α <ρ value (0.05> 0.067) and the value of chi square (X^2) count <chi square (X^2) table (5.709 < 12,592).

INTRODUCTION

Hypertension is a major risk factor for global mortality and morbidity and is still a major cause of cardiovascular disease (Natsis, Antza, Doundoulakis, Stabouli, & Kotsis, 2020). The World Health Organization (WHO) states that hypertension is a condition of the occurrence of high blood pressure and persists in the blood vessels (systolic blood pressure ≥140 mmHg and diastolic blood pressure ≥90 mmHg) (Físico, Hipertensión, En, & Revisión, 2020). The higher the pressure, the greater the work of the heart (Budi, Nurjannah, Nurhidayat, & Rifai, 2017).

Most people with hypertension are not aware of the dangers of hypertension caused by the client's lack of knowledge about hypertension (Noorhidayah, 2020). Some of the harmful effects of hypertension include heart

failure, kidney failure, stroke, circulatory disorders that lead to death (Song, Ma, Wang, Chen, & Zhong, 2019). Even though some of the causes and risk factors for hypertension such as high stress, obesity, smoking, consuming alcohol, caffeine and irregular exercise and poor sleep quality can be avoided by everyone (Ngueta, 2019) (Gambardella, Morelli, Wang, & Santulli, 2020). Obesity is also a risk factor for hypertension and is considered to be an independent factor, which means it is not influenced by other risk factors (Tiara, 2020) (Setiawan, Khaerunnisa, Ariyanto, & Firdaus, 2020).

Blood circulation can be reduced due to the nicotine in cigarettes which can shrink small arteries and strengthen the work of the heart (Memah, Kandou, & Nelwan, 2019) (Firmansyah, Jahidin, & Najamuddin, 2019). The acidity of the blood can increase due to alcohol, when the acidity of the blood increases, the blood will become thick and the heart is forced to pump blood stronger, this is when blood pressure occurs (Memah et al., 2019) (Setiawan, Ediati, & Winarni, 2017).

Knowledge is the result of "knowing" and this occurs after people sensing a certain object. According to the theory of WHO (World Health Organization) cited by Notoatmodjo (2007), one form of health object can be described by knowledge gained from one's own experience (Anggreani & Nasution, 2019) (Purba, 2019). Knowledge about risk factors, causal factors and how to avoid it, it is very important for people with hypertension to be able to control it (Budi et al., 2017). Alexander et al (2013) said that patient knowledge and awareness of hypertension are the main factors in controlling blood pressure (Wijayanti, 2020). Maintaining a healthy lifestyle, regular check-ups at health care centers, and adherence to treatment programs will increase along with a strong enough level of knowledge (Choroma et al., 2020). Several studies have shown that the level of knowledge can affect a person's attitude and character (Budi et al., 2017).

In his research, Andria (2013) said that strong knowledge about hypertension is a great potential for sufferers to manage stress. This is related to one of the risk factors for hypertension, namely stress (Hsu & Tain, 2020). The emergence of hypertension due to stress can be caused by activation of the sympathetic nervous system which stimulates the hormones adrenaline, cortisol and adenocorticotrophin stimulating hormone (ACTH). (Boyer-diaz et al., 2020). The secretion of these hormones can cause an intermittent increase in blood pressure (Budi et al., 2017).

Based on WHO data in 2015, hypertension is shown by around 1.13 billion people in the world, which means 1 in 3 people in the world are diagnosed with hypertension. It is estimated that 9.4 million people die from hypertension each year (Riskesdas, 2013). Based on Riskesdas 2013 data, the prevalence of hypertension in West Java, which was obtained through measurements at ≥18 years of age, is in the 4th position with the most cases of hypertension (29.4%) after East Kalimantan (29.6%), South Kalimantan (30.8%) and Bangka Belitung in the first position with Bangka 30.9% (Riskesdas 2013). Whereas in 2018, West Java experienced a high increase by ranking second as the province with the highest cases of hypertension in Indonesia, namely 39.6% after South Kalimantan with a prevalence of 44.1% (Riskesdas, 2013).
Lack of knowledge of hypertension sufferers based on cases, above, researchers are interested in examining the relationship between the level of knowledge and stress of hypertension sufferers in the work area of the Public Health Centre of Cijeungjing, Cijeungjing District, Ciamis Regency.

METHOD

This type of research is quantitative analytic with cross sectional approach. The independent variable (independent) is the level of knowledge and the dependent variable (dependent) is the level of stress in patients with hypertension. The population in this study were all patients with hypertension in the working area on the Public Health Centre of Cijeungjing as many as 101 people. With a purposive sampling technique as many as 50 people. The inclusion criteria for this study

were people with hypertension, able to write and read, not in the process of being hospitalized and willing to fill out an informed consent. Meanwhile, the exclusion criteria were patients with chronic diseases other than hypertension. This study uses primary data or data obtained directly from the object of research by distributing questionnaires. In conducting this research activity, researchers were assisted by nurses in the work area on the Public Health Centre of Cijeungjing, Cijeungjing District, Ciamis Regency.

The research instrument is a questionnaire that can be used as a measuring tool for the level of knowledge and stress levels of respondents. To measure the level of education using a questionnaire about the level of knowledge of hypertension which had previously been tested for validity and reliability of 20 questions. Meanwhile, the questionnaire for the perceived stress scale (PSS-10) consists of 10 questions given to respondents as a measure of stress levels. This research was conducted in the work area onf the Public Health Centre of Cijeungjing, Cijeungjing Subdistrict, Ciamis Regency on November 29, 2020. The data that has been obtained were then analyzed by statistical analysis test Chi square with SPSS for Windows version 20.

RESULTS

Sociodemographic Data

Table 1 Sociodemographic

Gender	**F**	**%**
Male	17	34
Female	33	66
Profession		
Work	19	38
Does Not Work	31	62
Education		
Elementary School	22	44
Junior High School	7	14
Senior High School	15	30
D-III	1	2
D-IV/S1	5	10
Age		
11-19 Years Old	7	14
20-60 Years Old	31	62
>60 Years Old	12	24
Income/month		
100.000 - 300.000	18	36
300.000 - 500.000	15	30
500.000 - 2.000.000	15	30
2.000.000 - 5.000.000	2	4

The majority of respondents have female gender, as many as 33 people (66%). The majority of respondents did not work, as many as 31 people (62%). The majority of respondents' education was elementary school graduates as many as 22 people (44%). And the majority of respondents aged between 20-60 as many as 31 people (62%). And the majority of respondents' income is Rp. 100,000-3.00,000 per month as many as 18 people (36%).

Univariate Analysis

Description of Knowledge of Patients with Hypertension in the work area of the Public Health Centre of Cijeungjing Ciamis

Table 2. Frequency distribution of respondents based on knowledge of hypertension sufferers in the work area of the Public Health Centre Cijeungjing Ciamis.

Knowledge	**F**	**%**
< Average	23	46
> Average	27	54
Total	50	100

Based on the table above, the majority of respondents have more knowledge than the average of 27 people (54%).

Description of Stress Level of Patients with Hypertension in the work area of the Public Health Centre of Cijeungjing Ciamis

Table 3. Frequency distribution of respondents based on the stress level of hypertension sufferers in the work area of the Public Health Centre of Cijeungjing Ciamis

Level Stress	**F**	**%**
Normal	6	12
Light	11	22
Moderate	33	66
Total	50	100

Based on the table above, the majority of respondents have a moderate stress level, namely 33 people (66%).

Bivariate Analysis

Table 4. Knowledge Relationship with the stress level of hypertension sufferers in the work area of Public Health Centre of Cijeungjing Ciamis.

Knowledge	Stress Level				Total		P Value	X^2 Count
	< Mean		>Mean					
	F	%	F	%	F	%		
Normal	1	2	5	10	6	12		
Light	3	6	8	16	11	22	0.067	5.709
Moderate	19	38	14	28	33	66		
Total	6	12	11	22	50	100		

Based on the table above, respondents who had less than average knowledge had a moderate level of stress, namely 19 people, as well as respondents with more than average knowledge had a moderate level of stress, namely 14 people.

From the results of data analysis, it was obtained that the chi square value (X^2) was 5.412 and the value of ρ value was 0.067. Based on the results of the data analysis above, it can be concluded that there is no significant relationship between knowledge of hypertension sufferers and stress levels in the work area of the Public Health Centre of Cijeungjing Ciamis because of the value α <ρ value (0.05> 0.067) and the chi square value (X^2) calculated <chi square (X^2) table (5.709 <12.592).

DISCUSSION

From the results of data analysis, it was obtained that the chi square value (X^2) was 5.412 and the value of ρ value was 0.067. Based on the results of the data analysis above, it can be concluded that there is no significant relationship between knowledge of hypertension sufferers and stress levels in the work area of the Public Health Centre of Cijeungjing Ciamis because of the value α <ρ value (0.05> 0.067) and the chi square value (X^2) calculated <chi square (X^2) table (5.709 <12.592).

As with research conducted by Noorhidayah (2020), which states that there is a relationship between knowledge and attitudes of the community with efforts to prevent hypertension in Mandi Angin Timur Village, Karang Intan District, Banjar Regency.

According to Sugiharto's research (2007) there is a relationship between stress and the incidence of hypertension, where people who experience psychological stress must experience hypertension.
Another problem that arises is that often negative emotions such as anxiety and depression arise slowly without realizing it and the individual will realize after physical symptoms appear, such as hypertension (Budi et al., 2017).

In his research, Ramayulis (2010) states that stress can cause an increase in blood pressure due to an increase in peripheral vascular retention and cardiac output, thus stimulating sympathetic nerve activity, releasing adrenaline and causing the heart to beat faster (Mahmudah, Maryusman, Arini, & Malkan, 2017).

CONCLUSIONS

Based on the results of the analysis, it was concluded that there was no significant relationship between knowledge and stress levels in patients with hypertension as evidenced by the value of α <ρ value (0.05> 0.067) and the value of chi square (X^2) count <chi square (X^2) table (5.709 < 12,592).

The suggestions that can be given to the community are expected to further increase knowledge about hypertension so that they can pay attention to health in efforts to prevent hypertension by always actively participating in counseling or health education whether held by Puskesmas,

REFERENCES

Anggreani, N., & Nasution, J. D. (2019). Hubungan pengetahuan dan sikap lansia dengan riwayat hipertensi dalam pengendalian tekanan darah pada lansia di puskesmas sibo-langit kabupaten deli serdang tahun 2019. *Jurnal Poltekkes Kemenkes Medan*,

9(1), 1–9.

Boyer-diaz, Z., Morata, P., Aristu-zabalza, P., Gibert-ramos, A., Bosch, J., & Gracia-sancho, J. (2020). Oxidative Stress in Chronic Liver Disease and Portal Hypertension : Potential of DHA as Nutraceutical. *Journal Nutriens*, *12*(2627), 1–13.

Budi, S. A., Nurjannah, R. S., Nurhidayat, R., & Rifai, S. (2017). gambaran tingkat pengetahuan tentang hipertensi dan tingkat stres pada klien hipertensi di klinik islamic center samarinda. *Jurnal Husada Mahakam*, *IV*(4), 181–194.

Choroma, B., My, P., Magdalena, Ł., Wojskowicz, P., My, H., Choroma, K., … Zalewska, A. (2020). The Impact of Hypertension and Metabolic Syndrome on Nitrosative Stress and Glutathione Metabolism in Patients with Morbid Obesity. *Oxidative Medicine and Cellular Longevity*, *1*(1), 1–10.

Firmansyah, A., Jahidin, A., & Najamuddin, N. I. (2019). efektifitas penyuluhan dengan menggunakan media leaflet dan video bahasa daerah terhadap pengetahuan bahaya rokok pada remaja. *Bina Generasi;Jurnal Kesehatan*, *11*(1), 80–86.

Físico, E., Hipertensión, A. E., En, A., & Revisión, A. (2020). acute physical exercise and hypertension in the elderly : a systematic review. *ARTIGO DE REVISÃO SISTEMÁTICA*, *26*(1), 347–353.

Gambardella, J., Morelli, M. B., Wang, X., & Santulli, G. (2020). Pathophysiological mechanisms underlying the beneficial effects of physical activity in hypertension. *Journal of Commentary*, *1*(1), 291–295. https://doi.org/10.1111/jch.13804

Hsu, C., & Tain, you lin. (2020). Early-Life Programming and Reprogramming of Adult Kidney Disease and Hypertension : The Interplay between Maternal Nutrition and Oxidative Stress. *Innternational Journal of Molecular Sciences Review*, *21*(3572), 1–19.

Mahmudah, S., Maryusman, T., Arini, F. A., & Malkan, I. (2017). Hubungan Gaya Hidup Dan Pola Makan Dengan Kejadian Hipertensi Pada Lansia Di Kelurahan Sawangan Baru Kota Depok Tahun 2015. *Biomedika*, *8*(2), 43–51. https://doi.org/10.23917/biomedika.v8i2.2915

Memah, M., Kandou, G. D., & Nelwan, J. E. (2019). hubungan antara kebiasaan merokok dan konsumsi alkohol dengan kejadian hipertensi di puskesmas kombi kecamatan kombi kabupaten minahasa. *Jurnal Kesmas*, *8*(1), 68–74.

Natsis, M., Antza, C., Doundoulakis, I., Stabouli, S., & Kotsis, V. (2020). Hypertension in Obesity : Novel Insights. *Current Hypertension Reviews*, *16*(1), 30–36. https://doi.org/10.2174/1573402115666190415154603

Ngueta, G. (2019). Caffeine and caffeine metabolites in relation to hypertension in U . S . adults. *European Journal of Clinical Nutrition*, *1*(1), 1–10. https://doi.org/10.1038/s41430-019-0430-0

Noorhidayah. (2020). hubungan tingkat pengetahuan dan sikap masyarakat dengan upaya pencegahan penyakit hipertensi. *Jurnal Ilmiah Ilmu Kesehatan*, *6*(1), 21–25.

Purba, E. M. (2019). hubungan pengetahuan penderita hipertensi dengan kepatuhan minum obat di poli penyakit dalam rsup h. adam malik tahun 2019. *Jurnal Poltekkes Kemenkes Medan*, *27*(1), 1–10.

Riskesdas, 2013. (2013). PENDAHULUAN, 1–7.

Setiawan, H., Ediati, A., & Winarni, T. I. (2017). Genetic Counseling to Reduce the Level of Depression in Parents of Children with Thalassemia Major. *ICSSHPE 2nd International Conference on Sports Science, Health and Physical Education Thalasemia.*, *1*(1), 102–106.

Setiawan, H., Khaerunnisa, R. N., Ariyanto, H., & Firdaus, F. A. (2020). Telenursing meningkatkan kualitas hidup pasien dengan penyakit kronis. *Jurnal Mutiara Ners*, *3*(2), 95–104.

Song, J., Ma, Z., Wang, J., Chen, L., & Zhong, J. (2019). Gender Differences in Hypertension American College of Cardiology. *Journal of Cardiovascular Translational Research*, *1*(5), 1–8.

Tiara, U. I. (2020). Hubungan Obesitas dengan Kejadian Hipertensi. *Jurnal STIKes Sitihajar*, *2*(2), 167–171.

Wijayanti, T. (2020). hubungan pengetahuan dengan kepatuhan pasien hipertensi di puskesmas kota magelang. *Repository Universitas Muhammadiyah Magelang*, *1*(1), 1–41.