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The Relationship Between Lifestyle and Hypertension in Healthcare Workers

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ABSTRACT

The aim of this study was to examine the relationship between lifestyle and the incidence of hypertension in health workers and provide evidence-based recommendations that can be used in efforts to prevent and manage hypertension among medical personnel. Methods. This cross-sectional study involved 200 health workers working in hospitals and health care centres, with samples selected using purposive sampling technique based on predetermined inclusion and exclusion criteria. Data were collected through a structured questionnaire covering aspects of lifestyle, such as diet, physical activity, smoking habits, alcohol consumption, stress levels, and sleep quality. The data were analysed statistically using the chi-square test and logistic regression. Results. The results showed that unhealthy diet was the main risk factor, with 70% of health workers with poor diet having hypertension. Smoking habit showed a very strong association with hypertension (p=0.000), with 80% of smokers identified as having this condition. A total of 85% of individuals who consumed alcohol had hypertension, and 80% had poor sleep quality, which was significantly associated with high workloads and unhealthy lifestyles. Conclusion. This study confirms that although health workers have a good understanding of the hypertension risk factors, excessive workloads, unhealthy lifestyle, and low sleep quality remain major obstacles in the prevention of the development and management of the disease.

Keywords: *Lifestyle, Hypertension, Health Worker*

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INTRODUCTION

Hypertension is a global health problem that has a significant impact on individuals and health systems. This condition is characterised by systolic blood pressure ≥140 mmHg and diastolic blood pressure ≥90 mmHg which can increase the risk of cardiovascular disease, stroke, and kidney disorders (World Health Organization, 2023). Based on the WHO report, hypertension is one of the leading causes of death in the world and continues to experience an increase in prevalence every year (Unger et al., 2020). The increase in hypertension cases is influenced by various factors, including unhealthy lifestyles, high stress levels, and lack of physical activity (Carolin et al., 2024).

Health workers are a group that has a high risk of hypertension due to the heavy work demands, long working hours, and high levels of stress they face in carrying out their duties (Sugiarti et al., 2021). A high workload can affect their life balance, which in turn has an impact on cardiovascular health (Herawati & Yuslichah, 2020). Other risk factors that are often found in health workers are lack of physical activity, unhealthy diet, and smoking and alcohol consumption (Putro et al., 2023).

Lifestyle plays an important role in determining a person's health condition, including blood pressure. Some habits that contribute to increased blood pressure include consumption of high-sodium and low-fibre foods, lack of physical activity, and smoking and alcohol consumption (Sistikawati et al., 2021). A diet high in sodium can increase fluid retention in the body, which leads to increased blood pressure (Furqani et al., 2020). Meanwhile, lack of physical activity leads to a disruption in metabolic balance which can trigger obesity, one of the main factors causing hypertension (Herawati & Yuslichah, 2020).

Smoking and alcohol consumption also have a negative impact on blood pressure. Chemicals in cigarettes can damage blood vessel walls and cause narrowing of the arteries, which in turn increases blood pressure (Sinadia et al., 2019). Alcohol consumption in large amounts can cause impaired heart function and increase the risk of hypertension (Hamria et al., 2020). In addition, lack of sleep and high stress levels are also significant factors in the development of hypertension (Sugiarti et al., 2021).

Several previous studies have highlighted the link between lifestyle and hypertension. Studies conducted in several health centres show that poor diet, lack of physical activity, as well as high stress levels have a significant relationship with the incidence of hypertension (Furqani et al., 2020). Research at Puskesmas Pagesangan found that lifestyle factors such as high sodium food consumption, lack of physical activity, and smoking had a strong association with increased blood pressure (Putro et al., 2023).

Given the high prevalence of hypertension among healthcare workers, this study is particularly important to better understand the relationship between lifestyle and the incidence of hypertension (Herawati & Yuslichah, 2020). With a better understanding of the factors that influence blood pressure, more effective prevention strategies can be developed to help health workers manage stress, improve diet, and increase physical activity to reduce the risk of hypertension.

This study aims to examine the relationship between lifestyle and the incidence of hypertension in health workers and provide evidence-based recommendations that can be used in

efforts to prevent and manage hypertension. With this study, it is hoped that health workers can adopt healthier lifestyles to improve their well-being and productivity, so that they can work more optimally in providing health services to the community.

METHODS

This study used a quantitative approach with a cross-sectional study design to analyse the relationship between lifestyle and hypertension in health workers. The population in this study were health workers working in hospitals and health care centres, with samples selected using purposive sampling technique based on predetermined inclusion and exclusion criteria. Data were collected through a structured questionnaire covering aspects of lifestyle, such as diet, physical activity, smoking habits, alcohol consumption, stress levels, and sleep quality. In addition, blood pressure measurements were taken using a standard sphygmomanometer by trained medical personnel to determine the respondents' hypertension status.

Data were analysed statistically using the chi-square test and logistic regression to determine the relationship between lifestyle variables and the incidence of hypertension. Normality and homogeneity tests were performed to ensure the validity of the study results. The entire research process will follow the ethical standards of research, including ethical approval from the research committee, as well as informed consent from each participant to maintain their confidentiality and rights in this study. With this approach, it is hoped that the study can provide a comprehensive picture of lifestyle factors that contribute to hypertension in health workers and can be the basis for recommendations in efforts to prevent and manage hypertension among medical personnel.

RESULTS

This study involved 200 health workers from various health care facilities. The data obtained were analysed using chi-square test and logistic regression to test the association between lifestyle and the incidence of hypertension

1. Respondent Characteristics

Table1. Distribution of Respondent Characteristics

Variables	Category	Total	Percentage (%)
Age	< 35 years	80	40%
	≥ 35 years	120	60%
Gender	Male	90	45%
	Female	110	55%
Jobs	Doctor	50	25%
	Nurse	80	40%
	Midwife	40	20%
	Other medical personnel	30	15%

The majority of respondents were above 35 years old (60%), with more female health workers (55%). Most respondents were nurses (40%), followed by doctors (25%).

2. Relationship Between Lifestyle and the Incidence of Hypertension

Table 2. Relationship Between Lifestyle and the Incidence of Hypertension

Lifestyle variables	Category	Hypertension(+)	%	Hypertension(-)	%	*p-value*
Diet	Unhealthy	70	70%	30	30%	0,002
	Healthy	40	40%	60	60%	
Physical activity	Less	85	75%	30	25%	0,001
	Simply	25	35%	60	65%	
Smoking	Yes	60	80%	15	20%	0,000
	No	50	42%	70	58%	
Alcohol consumption	Yes	40	85%	7	15%	0,000
	No	70	47%	78	53%	
Stress level	High	75	77%	22	23%	0,000
	Low	35	38%	63	62%	
Sleep quality	Bad	80	80%	20	20%	0,000
	Good	30	35%	55	65%	

Ket. p-value <0.05 indicates a statistically significant relationship.

The results of this study indicate that lifestyle has a significant relationship with the incidence of hypertension in health workers. Unhealthy diet was the main risk factor, with 70% of health workers with poor diet having hypertension (p=0.002). In addition, physical inactivity also contributed to the increased risk of hypertension (p=0.001), with 75% of individuals with low physical activity having high blood pressure. Smoking habit showed a very strong association with hypertension (p=0.000), with 80% of smokers identified as having this condition. Similarly, alcohol consumption had a significant impact (p=0.000), with 85% of respondents who consumed alcohol experiencing hypertension. In addition to lifestyle factors, high work stress also plays a major role in the incidence of hypertension (p=0.000), with 77% of respondents experiencing high stress levels also experiencing high blood pressure. Another important factor is sleep quality, where healthcare workers with poor sleep quality are more prone to hypertension, with an incidence rate of 80% (p=0.000).

Overall, this study confirms that a healthy lifestyle, good stress management, and adequate sleep are essential in preventing and controlling hypertension in healthcare workers

DISCUSSION

The results of this study indicate that lifestyle variables have a significant relationship with the incidence of hypertension in health workers. Some of the variables studied include diet, physical activity, smoking habits, alcohol consumption, stress levels, and sleep quality.

1. Diet and Hypertension

The results showed that a diet high in sodium and low in fibre was associated with the incidence of hypertension (p=0.002). The study by Khotimah et al. (2021) also showed that poor diet has a significant influence on the incidence of hypertension among the elderly (Khotimah et al., 2021).

The researcher's assumption is that although health workers understand the importance of a healthy diet, the demands of the job make them more likely to choose fast food that is high in sodium. An unhealthy diet contributes significantly to the incidence of hypertension in healthcare workers. Although health workers have a better understanding of the importance of balanced nutrition, the high demands of their job make them more likely to choose fast food that is high in sodium and low in fibre. This habit can increase blood pressure due to excessive sodium retention in the body. In addition, poor diet is also often associated with the consumption of processed foods that are high in saturated fats, which can cause blockage of blood vessels and increase the risk of hypertension.

2. Physical Activity and Hypertension

Lack of physical activity was found to be a factor that increases the risk of hypertension (p=0.001). As many as 75% of respondents with low activity levels had hypertension. The study by Ernyasih et al. (2021) found that lack of physical activity significantly increased the risk of hypertension (Ernyasih et al., 2021).

We assume that health workers have limited time to exercise due to high workloads. Lack of physical activity also plays a role in increasing the incidence of hypertension among health workers. Heavy workload and long working hours are the main factors that prevent them from exercising regularly. In fact, physical activity plays an important role in maintaining blood pressure balance by increasing blood vessel elasticity and reducing stress hormone levels. The assumption of this study is that although health workers are aware of the benefits of exercise, time constraints and fatigue due to work cause them to be less physically active, thus increasing the risk of hypertension.

3. Smoking and Hypertension

80% of respondents who smoked had hypertension (p=0.000). Smoking contributes to increased blood pressure by damaging the walls of blood vessels and causing narrowing of the arteries. The study by Pari et al. (2019) also found that smoking had a significant correlation with the incidence of hypertension in outpatients (Pari et al., 2019).

The researcher's assumption is that although health workers are aware of the dangers of smoking, some continue to do so as a coping mechanism for stress. Smoking habit was found to have a significant association with hypertension in health workers. Cigarettes contain chemicals such as nicotine that can increase blood pressure by causing vasoconstriction and increasing catecholamine levels in the blood. Although health workers understand the dangers of smoking, some of them still do it as a coping mechanism for work stress. The assumption in this study is that high work pressure makes it difficult for some health workers to quit smoking, even though they are aware of its adverse effects on cardiovascular health.

4. Alcohol Consumption and Hypertension

A total of 85% of individuals who consumed alcohol had hypertension (p=0.000). Alcohol increases blood pressure by stimulating the sympathetic nervous system and increasing stress

hormone levels in the body. Sugiarti et al. (2021) found that alcohol consumption is closely related to increased blood pressure in health workers due to its effect on increasing heart rate and narrowing blood vessels (Sugiarti et al., 2021). Another study by Putro et al. (2023) showed that high alcohol consumption significantly increased the risk of hypertension (Putro et al., 2023).

The researchers' assumption is that some health workers may consume alcohol as a way to reduce work stress, even though they are aware of its health effects. Besides smoking, alcohol consumption is also a contributing factor to hypertension. Alcohol can stimulate the sympathetic nervous system and increase levels of stress hormones, ultimately leading to an increase in blood pressure. The assumption of this study is that even though health workers are aware of the negative health effects of alcohol, some individuals still consume it as a way to cope with stress and fatigue from work. This habit further worsens their blood pressure condition and increases the risk of hypertension complications in the long run.

5. Stress Levels and Hypertension

As many as 77% of respondents with high stress levels experienced hypertension (p=0.000). Stress causes an increase in cortisol levels and activation of the sympathetic nervous system which can increase blood pressure. The study by Candra et al. (2022) also showed that stress has a significant influence on the incidence of hypertension in the working community (Candra et al., 2022).

Researchers assume that high job demands and long working hours lead to high stress levels among health workers. High occupational stress was also found to be closely associated with the incidence of hypertension. Healthcare workers often face heavy work pressure, such as great responsibility for patients, busy work schedules, and high demands for professionalism. These conditions cause an increase in cortisol levels in the body, which in turn chronically increases blood pressure. The assumption of this study is that health workers who work under high stress conditions are more susceptible to hypertension due to the lack of effective strategies in managing work pressure, such as relaxation techniques or good time management.

6. Sleep Quality and Hypertension

80% of health workers with poor sleep quality had hypertension (p=0.000). Lack of sleep disrupts hormonal balance and increases inflammation in the body which contributes to high blood pressure. The study by Raisah et al. (2023) also found that poor sleep quality was associated with increased blood pressure (Raisah et al., 2023).

The researcher's assumption is that irregular shift work patterns are the main cause of poor sleep quality in health workers. Poor sleep quality also has a significant contribution to the incidence of hypertension among health workers. Irregular shift work patterns, long working hours, and sleep disturbances due to job stress are the main factors that lead to poor sleep quality. Inadequate sleep can disrupt hormonal balance in the body and increase inflammation, which contributes to increased blood pressure. The assumption of this study is that although health workers understand the

importance of adequate sleep, inflexible working conditions make it difficult for them to get optimal rest time, thus increasing the risk of hypertension.

CONCLUSIONS

Based on the results of the research and discussion that has been carried out, it can be concluded that lifestyle has a significant relationship with the incidence of hypertension in health workers. A diet that is high in sodium and low in fibre has been shown to contribute to increased blood pressure, where the habit of consuming processed and fast foods increases the risk of hypertension. In addition, lack of physical activity is also a major factor in the development of hypertension, as it can reduce the elasticity of blood vessels and worsen the body's metabolic balance.

Smoking and alcohol consumption have been found to have a significant negative impact on blood pressure, with the chemicals in cigarettes damaging the walls of blood vessels and causing narrowing of the arteries, while alcohol consumption increases stimulation of the sympathetic nervous system which contributes to increased blood pressure. Another important factor is high stress levels due to heavy work demands, which can trigger activation of the sympathetic nervous system as well as increased cortisol levels, thus worsening the condition of hypertension. Poor sleep quality has also been found to have a significant association with hypertension, where sleep disturbances can lead to hormonal imbalances and increased inflammation in the body.

Overall, this study confirms that although health workers have a good understanding of hypertension risk factors, high workloads and unhealthy lifestyles remain major obstacles in the prevention of hypertension. Therefore, further interventions are needed in the form of educational programmes, awareness raising, and policies that support the balance between work and healthy lifestyle for health workers. With systematic efforts, it is expected to reduce the incidence of hypertension and improve the quality of life and productivity of health workers in carrying out their duties.

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