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Analysis of the Susceptibility and Seriousness of Hypertension Control Measures with Compliance with Routine Health Checks (Blood Pressure Checks)

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ABSTRACT

Introduction: Hypertension is a serious medical condition that can lead to various health complications and can be significantly prevented through regular blood pressure monitoring. The monthly trend of hypertension in the five districts with the highest number of hypertension cases in Kolaka Regency prompted researchers to conduct a study on the analysis of the relationship between susceptibility and seriousness of hypertension control measures and compliance with routine health checks (blood pressure checks).

Method: The type of research used is quantitative research with an analytical observation method and a Partial Least Squares (PLS) research design. The population was 570 people and the sample was 235 people using Sampling (area sampling) in the sampling.

Result: The vulnerability is 0.326 (positive direction), the T statistic is 3.655, and the p-value is 0.000. The severity is -0.672 (negative direction), the T statistic is 5.189, and the p-value is 0.000. The test results show that the p-value is <0.05.

Conclusion: Vulnerability and seriousness are related to hypertension control measures with compliance with routine health checks (blood pressure checks).

Introduction

Non-communicable diseases (NCDs) are diseases that cannot be transmitted from one person to another through any form of contact. The development of these non-communicable diseases takes a relatively long time (chronic).[1] Non-communicable diseases are considered the leading cause of death worldwide. The World Health Organization (WHO) estimates that deaths from these diseases will continue to rise by 52 million per year.[2] One of the non-communicable diseases that is very serious today is hypertension.[3]

Hypertension or high blood pressure is a disease of the heart and blood vessels which is characterized by increased blood pressure.[4]

According to the WHO, a person is considered hypertensive if their systolic pressure is ≥140 mmHg and their diastolic pressure is ≥90 mmHg. Hypertension is often called the silent killer because many sufferers are initially unaware they have high blood pressure, so they don't take steps to control it, resulting in complications.[5]

Hypertension is still a serious health problem in the world. The number of people suffering from hypertension continues to increase from year to year.[6]According to the WHO, the global prevalence of hypertension is 22% of the world's population. By 2025, 1.5 billion people will suffer from hypertension, and an estimated 9.4 million people worldwide will die annually from hypertension and its complications.[7]Only one fifth of hypertension sufferers take preventative and control measures against their hypertension.[8]

Hypertension is a degenerative disease that is a serious problem today. It is categorized as the silent disease or the silent killer because sufferers are unaware they have it or don't know it until they have their blood pressure checked.[9] The incidence of hypertension increases with age. Uncontrolled hypertension can lead to dangerous complications, such as coronary heart disease, stroke, kidney disease, and vision impairment. Hypertension is the leading cause of death, surpassing all other causes.[10]

Indonesia is a region in Southeast Asia with a relatively high incidence of hypertension. According to data from the most recent 2018 Basic Health Research, the incidence of hypertension reached 34.11%.[11] This incidence rate experienced a significant increase when compared with the data obtained from the previous Basic Health Research results in 2013, where the results of blood pressure measurements of Indonesian people aged >18 years were 25.8% experiencing hypertension and a significant increase occurred in blood pressure measurements of those aged over 60 years, namely 28.5%.[12] The number of hypertension cases in Indonesia is 63,309,620, while the death rate due to hypertension in Indonesia is 427,218 people.[13]

Based on data from the Southeast Sulawesi provincial health service, the results of blood pressure measurements of residents aged ≥18 years by district/city for the period (2009-2013), the prevalence of hypertension in Southeast Sulawesi was (22.5%) significantly increasing in the period (2014-2018) to (29.7%).[14] Based on data from the Southeast Sulawesi Provincial Health Office (Riskesdas 2018), the highest prevalence of hypertension occurred in South Buton Regency at (39.13%) and the lowest in Central Buton Regency at (16.96%). Kendari City is ranked 10th out of 17 districts/cities with a prevalence of hypertension sufferers of (27.2%), who received hypertension health services.[8]

Many diseases can be caused by hypertension, such as coronary heart disease (20%) and stroke (30-40%). Furthermore, the prevalence of hypertension increases annually. Most people with hypertension often ignore their condition because they don't experience any symptoms.[15] Stroke is one of the cardiovascular diseases, which is the second leading cause of death globally after ischemic heart disease. Not only is it the second leading cause of death, but it is also the third leading cause of disability worldwide.[16]As in Research[17], stated that there is an influence of health literacy through M_Stepscoma by strengthening family support for primary stroke prevention behavior, so that the results of his research emphasize family support in preventing stroke.

Hypertension is a serious problem worldwide. This is due to its relatively high prevalence, which is expected to increase in the future.[18] Furthermore, hypertension is sometimes accompanied by other diseases that also tend to increase in incidence, such as heart disease, stroke, and even death. Currently, hypertension is also prevalent among young adults, placing a significant financial burden on families, as treatment for hypertension itself is time-consuming and expensive.[19]

Other research has found that the prevalence of hypertension tends to increase with age. Furthermore, the study also stated that in Indonesia, approximately 1.8–28.6% of people with hypertension are over 60 years old. There are two causes of hypertension: non-modifiable risk factors and modifiable risk factors. Hypertension can occur due to the interaction of two or more risk factors. Having only one risk factor without other risk factors does not necessarily mean hypertension will occur.[20]

Hypertension, which is a serious medical condition and can lead to various health complications, can be significantly prevented

through the habit of regularly monitoring blood pressure.[21] One very effective preventative measure is to measure your blood pressure regularly, at least once a month. By measuring your blood pressure regularly, you can detect early changes or increases in blood pressure that may not yet show obvious clinical symptoms.[22] This early detection allows individuals to immediately take proactive steps to manage or lower blood pressure before it develops into more serious hypertension.[23] Furthermore, regular measurements also provide an opportunity to monitor the effectiveness of any preventive or treatment strategies implemented, and help maintain blood pressure within a healthy range. This can significantly reduce the risk of developing hypertension and related complications, making it an important step in maintaining long-term health.[24] From these descriptions, researchers want to research the Analysis of the Relationship between Susceptibility and Seriousness of Hypertension Control Measures with Compliance with Routine Health Checks (Blood Pressure Checks).

Method

The type of research used is quantitative research with an analytical observation method with a Partial Least Square (PLS) research design, this research will be carried out from August 2024 to September 2024. The sample in this study was some of the employees of the Community Health Centers in Kolaka Regency (14 Community Health Centers) and were recorded in the employee register book at the Community Health Center as many as 570 people in 2022 to November 2023. The population in this study was all Community Health Center employees in Kolaka Regency and were recorded in the employee register book at the Community Health Centers throughout Kolaka Regency as many as 570 people in January to November 2023. The data analysis tool for this research is the WarpPLS software which combines the Partial Least Square (PLS) method with the Structural Equation Model (SEM) approach.

Result

Table 1 showed that the path coefficient value of X1 (Susceptibility) on hypertension control behavior with compliance with routine health checks (blood pressure checks) is 0.326 (positive direction), T statistics of 3.655, and p-value of 0.000. The test results show that the p-value <0.05. This means that X1 (Susceptibility) has a significant effect on hypertension control behavior with compliance with routine health checks (blood pressure checks) in a positive direction, thus H1 is accepted. Then the path coefficient value of X2 (Seriousness) on hypertension control behavior with compliance with routine health checks (blood pressure checks) is -0.672 (negative direction), T statistics of 5.189, and p-value of 0.000. The test results show that the p-value <0.05. This means that X2 (Seriousness) has a significant effect on hypertension control behavior with compliance with routine health checks (blood pressure checks) in a negative direction. Thus H2 is accepted.

Table 1.
Path Coefficient Value

Hypothesis	Connection	Original sample (O)	T statistics (|O/STDEV|)	P values
H1	X1 (Vulnerability)Blood Technology	0.326	3,655	0.000
H2	X2 (Seriousness)Blood Technology	-0.672	5,189	0.000

Discussion

The relationship between vulnerability to hypertension control behavior and compliance with routine health checks (blood pressure checks).

Hypothesis testing 1 (H1) which states that the path coefficient value of X1 (Susceptibility) on hypertension control behavior with compliance with routine health checks (blood pressure checks) is 0.326 (positive direction), T statistics of 3.655, and p-value of 0.000. The test results show that the p-value <0.05. This means that X1 (Susceptibility) has a significant effect on hypertension control behavior with compliance with routine health checks (blood pressure checks) in a positive direction. Thus, H1 is accepted.

As we know, hypertension or high blood pressure is one of the most common chronic diseases and can cause serious complications such as heart disease, stroke, and kidney failure.[25] These results are also in accordance with research, hypertension control requires high adherence to routine health checks, including blood pressure monitoring. However, there is variation in individual adherence to these checks, which is often influenced by susceptibility to hypertension control behaviors. Susceptibility to hypertension control behaviors refers to the extent to which an individual is vulnerable to risks associated with habits or behaviors related to managing their hypertension.[26] Several factors contributing to this vulnerability include an individual's understanding of the disease, stress management skills, and social support. For example, individuals who lack knowledge about the dangers of hypertension or effective ways to manage it may be more vulnerable to neglecting routine health checks.[27]

Adherence to routine health checkups is crucial for monitoring and managing hypertension. These checkups include regular blood pressure measurements, which allow early detection of changes that may require adjustments in medication or lifestyle.[28] Compliance with routine check-ups is often influenced by various factors, including an individual's level of knowledge about hypertension, belief in the benefits of screening, and the availability of health facilities.

Other research also shows a significant relationship between susceptibility to hypertension control behaviors and adherence to routine health checkups. Individuals who feel more vulnerable to the negative impacts of hypertension are more likely to prioritize routine checkups.[29]For example, someone who has personal or family experience with complications of hypertension may be more motivated to have regular checkups to prevent similar conditions.

On the other hand, vulnerability can also have negative consequences if not accompanied by effective management strategies. Individuals who feel stressed or powerless in managing their hypertension may be less compliant with routine health check-ups, feeling pointless or experiencing excessive anxiety.[30] This suggests that social support and educational interventions can play an important role in changing these behaviors.

To improve adherence to routine health checkups among vulnerable individuals, it is important to implement educational and supportive interventions. Health education programs that increase understanding of hypertension and the benefits of regular checkups can help reduce vulnerability. Furthermore, support from medical professionals, family, and the community can increase individuals' motivation to undergo regular checkups.[31]

Community-based approaches, such as education programs and support groups, have also proven effective in improving adherence to health screenings. This includes organizing health campaigns that focus on understanding hypertension and the importance of regular monitoring.[32] Through this approach, individuals not only get the information they need, but also feel supported in their journey to manage hypertension.

Thus, based on the results obtained, there is a significant relationship between vulnerability to hypertension control behaviors and adherence to routine health checks. Vulnerability can positively or negatively influence adherence, depending on the level of knowledge, support, and management strategies implemented. Therefore, interventions that prioritize education and social support are crucial to improving adherence and the effectiveness of hypertension management. Further research and the development of comprehensive strategies may help address this issue and improve health outcomes for individuals with hypertension.

The relationship between seriousness towards hypertension control behavior and compliance with routine health checks (blood pressure checks)

Hypothesis 2 (H2) testing states that the path coefficient value of X2 (Seriousness) on hypertension control behavior with compliance with routine health checks (blood pressure checks) is -0.672 (negative direction), T statistics of 5.189, and p-value of 0.000. The test results show that the p-value <0.05. This means that X2 (Seriousness) has a significant effect on hypertension control behavior with compliance with routine health checks (blood pressure checks) in a negative direction. Thus, H2 is accepted.

This research is in accordance with the research results, that showed a significant relationship between seriousness in blood pressure checks and compliance with routine health checks. Patients who showed high seriousness in carrying out routine blood pressure checks tended to be more compliant with medical recommendations and undergo routine health checks regularly. Specifically, 76% of patients with a high level of seriousness in blood pressure checks followed the recommended check schedule, compared to only 39% of patients with a low level of seriousness ($r = 0.70$, $p < 0.01$).[33]

Hypertension is a medical condition that requires consistent and ongoing management to reduce the risk of serious complications such as heart disease and stroke. One key aspect of hypertension management is regular blood pressure monitoring. The commitment to regular blood pressure checks, including frequency, regularity, and adherence to medical recommendations, can potentially impact the overall outcome of hypertension management.[34]

People who are serious about blood pressure checks follow the recommended frequency, for example, every three months or more frequently. They understand the importance of regular monitoring to assess the effectiveness of treatment and detect changes in their health early.[35]

This can also be influenced by the regularity of checkups. Regular blood pressure checks also reflect a person's commitment to managing their hypertension. Regular checkups at the designated times demonstrate a strong commitment to managing their hypertension. This regularity is important to ensure well-controlled blood pressure and to avoid fluctuations that can lead to complications.

Furthermore, adherence to medical recommendations regarding blood pressure screening includes not only attending scheduled checkups but also following additional advice, such as adjusting medication if needed. Someone who is serious about blood pressure screening typically follows all aspects of medical recommendations, which contributes to better hypertension management.[36]

Similar research also emphasized the importance of seriousness in blood pressure monitoring as a factor influencing adherence to routine health checks. Findings showed that individuals who are serious about blood pressure monitoring are more likely to adhere to the recommended health check schedule. This seriousness reflects a level of responsibility and awareness of the importance of regular monitoring for effective hypertension management. Seriousness in blood pressure monitoring is associated with a better understanding of the benefits of regular monitoring and the impact of medication on blood pressure. Individuals who are more serious about blood pressure monitoring typically receive good medical education and have a better understanding of the importance of regular checks.[37]

Thus, seriousness in blood pressure screening is positively associated with adherence to routine health checks. Individuals who are serious about having their blood pressure checked regularly are more likely to adhere to the recommended health check schedule. Social support and accessibility of health services also play a significant role in strengthening this relationship. These findings suggest that a comprehensive approach that includes education, social support, and improved access to health services can increase adherence to routine health checks and improve hypertension management.

Conclusion

Vulnerability and seriousness of hypertension control measures are related to compliance with routine health checks (blood pressure checks). Therefore, education and awareness raising are needed; the public needs to

be better educated about the importance of regular blood pressure checks in hypertension management. Health education programs that educate the public on how to build and maintain confidence in their ability to manage their blood pressure can help improve compliance with routine health checks. This could include workshops, seminars, or educational materials disseminated through various media.

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