ANALYSIS OF BEVERAGE CONSUMPTION THAT INFLUENCES HYPERTENSION IN PRE-ELDERLY AT AIKMEL HEALTH CENTER

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Abstrak:
Hipertensi merupakan masalah kesehatan global yang memiliki dampak signifikan terhadap penyakit kardiovaskular. Penelitian ini bertujuan untuk menganalisis konsumsi minuman yang mempengaruhi hipertensi pada pra lansia di Puskesmas Aikmel. Penelitian ini menggunakan metode analisis statistik, termasuk uji Chi Square, untuk mengevaluasi hubungan antara konsumsi minuman beralkohol, kopi dan Soft Drink dengan kejadian hipertensi pada lansia. Hasil: Hasil uji Chi Square menunjukkan bahwa nilai p = 0,000, yang lebih rendah dari tingkat signifikansi α = 0,05. Temuan ini mengindikasikan penolakan hipotesis nol (H0) dan penerimaan hipotesis alternatif (H1), artinya terdapat hubungan yang signifikan antara konsumsi kopi dan kejadian hipertensi, dengan lansia yang mengonsumsi lebih dari 2 gelas kopi per hari memiliki risiko lebih tinggi. Namun, tidak terdapat hubungan yang signifikan antara konsumsi Soft Drink dan kejadian hipertensi pada lansia. Temuan ini memberikan pemahaman lebih lanjut tentang faktor-faktor yang dapat mempengaruhi hipertensi pada kelompok pra lansia. Implikasinya termasuk pentingnya pengelolaan konsumsi kopi sebagai strategi pencegahan yang lebih efektif terhadap hipertensi. Dengan mengevaluasi dampak minuman pada tekanan darah, dapat diambil langkah-langkah preventif yang lebih spesifik dan disesuaikan dengan kebutuhan populasi ini

Kata kunci: *Hipertensi; minuman beralkohol; minuman bersoda, kopi*

Abstract:
Hypertension is a global health problem that has a significant impact on cardiovascular disease. This study aims to analyze drink consumption which influences hypertension in pre-elderly people at the Aikmel Health Center. This study used statistical analysis methods, including the Chi-Square test, to evaluate the relationship between the consumption of alcoholic drinks, coffee, and soft drinks and the incidence of hypertension in the elderly. The Chi-Square test results show that the p-value = 0.000, which is lower than the significance level α = 0.05. These findings indicate rejection of the null hypothesis (H0) and acceptance of the alternative hypothesis (H1), meaning that there is a significant relationship between coffee consumption and the incidence of hypertension, with elderly people who consume more than 2 glasses of coffee per day having a higher risk. However, there is no significant relationship between soft drink consumption and the incidence of hypertension in the elderly. These findings provide a further understanding of the factors that can influence hypertension in the pre-elderly group. The implications include the importance of managing coffee consumption as a

more effective prevention strategy against hypertension. By evaluating the impact of drinking on blood pressure, more specific preventive measures can be taken and tailored to the needs of this population

Keyword: *Hypertension; alcoholic beverages; soft drinks; coffee*

Introduction

Hypertension is a chronic condition of increased blood pressure, characterized by systolic blood pressure of more than 140 mmHg and diastolic blood pressure of more than 90 mmHg [1]. Hypertension is a major risk factor for cardiovascular disease. Cardiovascular disease increased by 25% worldwide in 2000 and is expected to increase by 40% by 2025 [2]. The World Health Organization (WHO) recorded 839 cases of hypertension in 2012. They are expected to increase to 1.15 million cases by 2025, which will cover about 29% of the global population. Hypertension is more common in women compared to men, especially in developing countries, where 80% of cases occur [3].

Around 1.13 billion people have hypertension, and 45% of cases of heart disease complications, such as heart attacks or heart failure, can be attributed to hypertension [4]. Hypertension Recognized as the leading cause of cardiovascular disease worldwide, hypertension is the most common cardiovascular disorder that can lead to stroke and coronary heart disease. Hypertension is still increasing and is expected to increase by 30% by 2025 [5]. Approximately 34% of men and 30% of women in the UK have hypertension with a blood pressure above 140/90 mmHg or are on medication. Nearly one billion people worldwide have hypertension, and the estimate for 2025 is around 1.6 billion people [6].

The number of hypertension cases in developing countries, from 639 million in 2000, is expected to increase by approximately 80% by 2025. This prediction is based on current population growth and the number of hypertensive patients [7]. As many as 95% of people who

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suffer from hypertension are classified as essential or primary hypertension [8]. This means that the cause of hypertension in the majority of cases is not known with certainty, and this hypertension appears without any disease or other medical condition that can be identified as a direct cause [9]. The remaining 5% is caused by an additional disease known as secondary hypertension. This means that in this case, hypertension is the result of a medical condition or other factor that can be identified as a direct cause of high blood pressure [10]. Some risk factors for hypertension cannot be controlled, such as increasing age, gender, genetic factors, and racial factors [11];[12];[13];[14];[15]; [16]. These are factors whose nature cannot be changed by the individual. Although most risk factors cannot be controlled, certain factors can be addressed [17];[18]. For example, smoking habits, lack of physical activity, stress, obesity, excessive coffee consumption, and potassium and magnesium deficiencies can contribute to the development of hypertension [19];[2021].

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Apart from genetic and lifestyle factors [22], drink consumption has been identified as one of the causes that contribute to hypertension [23]. Certain drinks, such as fizzy, caffeinated, and alcoholic beverages, can have a significant impact on blood pressure [24]. Therefore, it is very important to analyze beverage consumption in the pre-elderly group, considering that they are at a phase of life that is vulnerable to diseases such as hypertension [25].

Caffeine consumption can be a potential risk factor for hypertension [26];[27]. Epidemiological studies have shown an association between high caffeine intake and increased blood pressure [28]. Apart from caffeine, alcoholic drinks have a direct impact on the cardiovascular system and can increase the risk of hypertension [29]. Fizzy drinks and those containing artificial sweeteners have been linked to an increased risk of cardiovascular disease [30]. The added sugar content and additives in these drinks can play a role in the development of hypertension [31].

Based on statistical data regarding hypertension cases in the East Lombok Regency, a significant increase of 52.63% was recorded. Information from the integrated report on non-communicable diseases per community health centre showed that the Aikmel Community Health Center recorded the highest increase in cases, reaching 1,824 cases. The number of hypertension cases in 2021 reached 1,265, an increase from the previous year, namely 1,118 cases in 2020 (East Lombok District Health Profile, 2022). Therefore, it is necessary to analyse the extent to which the consumption of these drinks contributes to hypertension in the elderly population. Analysis of beverage consumption among the elderly at the Aikmel Community Health Center can provide a strong basis for the development of more effective prevention strategies for hypertension. By understanding the impact of drinking on blood

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pressure, more specific preventive measures can be taken and tailored to the needs of this population.

The importance of this research is further strengthened by the focus on beverage consumption as a potential contributing factor to cases of hypertension in the elderly. Analysis of beverage consumption at the Aikmel Community Health Center can provide a strong basis for developing more effective preventive strategies against hypertension. By understanding the impact of drinking on blood pressure, more specific preventive measures can be taken and tailored to the needs of this population. The novelty of this research lies in the focus on hypertension cases which have experienced a drastic increase in the East Lombok Regency, especially at the Aikmel Community Health Center. This study also highlights the analysis of beverage consumption as a factor that may contribute to the increase in hypertension cases among the elderly. By understanding the relationship between beverage consumption and blood pressure, this study makes an important contribution to identifying potential prevention strategies that are more effective and tailored to local community conditions. The results of this study can serve as a basis for developing more targeted interventions to address the increasing public health problems in the region.

Mothode of Research

This research applies a cross-sectional study design, which is used to observe and measure variables at a certain point in time, to analyse the relationship between risk factors and the effects that occur. In this context, this study aimed to understand the impact of drink consumption on the incidence of hypertension in a pre-elderly group in the Aikmel Community Health Center working area. Cross-sectional designs allow researchers to collect data over one specific period, examining the relationship between explanatory variables (such as types of drinks consumed) and response variables (incidence of hypertension) in the same population at that time

The study population consisted of 129 pre-elderly people who routinely underwent health checks at the Aikmel Health Center. A sample size of 42 people was selected using the Stanley–Lameshow formula to determine the representative sample size from the population. This formula helps to determine a sample that reflects the characteristics and variations in a larger population. Thus, selecting an appropriate sample is expected to provide reliable research results and be representative of the pre-elderly population undergoing health checks at the Aikmel Health Centre.

In this study, data were collected using a questionnaire that contained a list of questions or statements that were logically related to the research problem. This questionnaire was designed to collect answers that can be used as analysis material to test research hypotheses [32]. Univariate analysis is an analytical approach performed on each variable studied independently, without any connection to other variables. The purpose of this analysis was to provide a general description of the respondents and research variables.

[32] Sugiyono, *Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif, Dan R&D* (Bandung: Alfabeta, 2014).

The results of the univariate analysis are presented in the form of a frequency distribution table which contains the characteristics of the respondents and their answers to the submitted questionnaire.

Bivariate analysis was used to evaluate the relationship between the two variables. In this study, bivariate analysis was carried out to determine the relationship between alcohol consumption, coffee consumption, and carbonated drink consumption with the incidence of hypertension using the Chi-Square test, which is a statistical method used to test the significance of relationships between variables [33]. This analysis helps to understand the influence of these variables on the incidence of hypertension in the population studied.

Result

Analysis Results

After conducting the research, the results of the univariate analysis were obtained using the following frequency distribution table:

Table 1. Frequency Distribution of Alcoholic Drink Consumption

Variable	Number of respondents (N)	Percentage (%)
Yes	7	8,2
No	77	91,8
Total	**84**	**100**

This analysis provides an idea of the number of respondents involved in alcohol consumption. Of the 84 respondents, seven (8.2%) consumed alcohol (Yes), while 77 (91.8%) did not consume alcohol (No).

Table 2. Frequency Distribution of Soft Drink Consumption

Variable	Number of respondents (N)	Percentage (%)
Often	9	10,7
Seldom	75	89,3
Total	**84**	**100**

This frequency distribution analysis provided an overview of the consumption patterns of Soft Drinks in the study population. The majority of respondents (89.3%) rarely consumed fizzy drinks, while a small portion (10.7%) consumed them frequently.

Table 3. Frequency distribution of coffee consumption

Variable	Number of respondents (N)	Percentage (%)
More	48	57,1
Enough	36	42,9
Total	**84**	**100**

This frequency distribution analysis provided an overview of coffee consumption patterns in the study population. Percentages are used to show the proportion of total respondents who fell into each consumption category. In this case, the majority of respondents (57.1%) consumed coffee in more than sufficient amounts, more than twice a

[33] Siregar Syofian, *Statistika Terpadu* (Jakarta: Kencana, 2017).

day, while a small portion (42.9%) consumed coffee in amounts that were considered sufficient, less than twice a day.

Furthermore, the results of the bivariate analysis in this study aimed to evaluate the relationship and measure the odds ratio value of the observed risk factors. This method was used to examine the correlation between the independent and dependent variables by considering the scale of the existing data. The Chi-Square statistical test was used in this analysis, and the Odds Ratio (OR) calculation was carried out with a confidence level (CI) of 95%, with a significance level of 0.05. This approach provides a basis for determining the extent to which the independent variable influences the dependent variable, and whether the relationship is statistically significant. The results of the analysis are shown in table below:

Table. 4 Results of bivariate analysis

Variable	**P-value (Significance Value)**	*Odds Ratio* (OR)	**Confidence Interval (CI)**
alcoholic beverages	0,794	1,315	0,469 – 3,682
Coffee	0,000	8,5	3,120 – 23,160
Soft drink	1,000	0,779	0,194-3,129

Discussion

Alcoholic beverages

After analysis using SPSS, the P-value was 0.794, Odds Ratio (OR) was 1.315, and Confidence Interval (CI) was 0.469 – 3.682. This study shows that there is no significant relationship between the consumption of alcoholic beverages and the incidence of hypertension in the elderly. This is stated by the P-value which is greater than the significance level (0.794 > 0.05), and the OR value of approximately 1.315 indicates that there is no strong influence in increasing the risk of hypertension. This research is in line with the findings of research conducted by 34, which also showed that there was no significant relationship between alcohol consumption habits and the incidence of hypertension in the elderly. The research was carried out using a similar method and found a p-value that did not reach the level of significance. These findings support the consistent results that alcohol consumption does not significantly influence the incidence of hypertension in the elderly. This research is also in line with research by 35, which states that consuming alcoholic beverages can increase the likelihood of high blood pressure, especially in excessive consumers.

Coffee

After analysis using SPSS, we obtained a p-value of 0.000, an Odds Ratio (OR) of 8.5, and a Confidence Interval (CI) of 3.120 – 23.160. These results show a significant relationship between coffee consumption and the incidence of hypertension in the elderly. A very low p-value (0.000 < 0.05) indicates that this relationship is statistically significant. In addition, an OR value of 8.5 indicates that elderly people who consume more than 2 cups of coffee per day

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have a risk of hypertension that is approximately 8.5 times higher than those who consume less than or equal to 2 cups of coffee per day. This research is in line with the findings of 36, which shows that coffee consumption of more than three glasses per day increases the risk of hypertension by 12,500 times. These findings illustrate the consistency of the results between this study and previous research, showing that excessive coffee consumption has a significant impact on the incidence of hypertension in the elderly. Support from the research results of 37;38;39 is also relevant, which states that the habit of drinking 1-2 cups of coffee per day can increase the risk of hypertension by 4.12 times. The consistency of these findings can be considered an indicator of the reliability of the results.

Soft drink

After analysis using SPSS, we obtained a P-value of 1.000, an Odds Ratio (OR) of 0.779, and a Confidence Interval (CI) of 0.194-3.129. This means that there was no significant relationship between the consumption of soft drinks and the incidence of hypertension in the elderly. A P-value greater than the significance level (1.000 > 0.05) indicated that there was insufficient evidence to reject the null hypothesis, and an OR value close to 1 (0.779) indicated that there was no significant effect in increasing the risk of hypertension. The results of the analysis showed no significant relationship between the consumption of soft drinks and the incidence of hypertension in the elderly, which is consistent with the findings of other studies. Previous research by 40 also did not find a strong correlation between consumption of soft drinks and the risk of hypertension. These findings strengthen the validity of the results of this study and provide additional support for the insignificant contribution of carbonated drinks to the risk of hypertension in elderly individuals.

Conclusion

Based on the results of the discussion, it can be concluded that the following are the factors that influence cases of hypertension in the elderly at the Aikmel Health Center: there is no correlation between the consumption of alcoholic drinks and soft drinks as a risk factor for the incidence of hypertension in the elderly at the Aikmel Health Center. Drinking coffee more than three times a day is a risk factor for hypertension in the elderly at the Aikmel Health Center.

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