

Research Articles

Saturated Fat Intake with Blood Pressure in Elderly Women Asupan Lemak Jenuh dengan Tekanan Darah pada Lansia Wanita

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Abstract

The population of the elderly people is increasing from time to time and there is a change in the diseases pattern from infectious diseases to degenerative diseases. One of degenerative diseases that frequently occur in the elderly people is an increased blood pressure or hypertension. This study aims to determine the relationship between saturated fat intake and blood pressure in elderly women. This type of research was quantitative using a cross sectional approach. Samples were taken with a total sampling technique of 40 subjects. Processing data was using The Pearson correlation test. Based on the results of the analysis test, there was no relations between saturated fat intake with systolic blood pressure and diastolic blood pressure (p -value=0,183 and 0,333). This was because many factors affect blood pressure. The conclusion of this study was that there was no relationship between saturated fat intake with systolic blood pressure and diastolic blood pressure.

Keywords: blood pressure, elderly, saturated fat intake

Abstrak

Populasi lansia dari masa ke masa semakin meningkat dan adanya peralihan pola penyakit dari penyakit infeksi menjadi penyakit degeneratif. Salah satu penyakit degeneratif yang sering terjadi pada lansia adalah kenaikan tekanan darah atau hipertensi. Penelitian ini bertujuan untuk mengetahui hubungan asupan lemak jenuh dengan tekanan darah pada lansia wanita. Jenis penelitian ini adalah kuantitatif dengan menggunakan pendekatan *cross sectional*. Sampel diambil dengan teknik total sampling sebanyak 40 subjek. Pengolahan data menggunakan uji korelasi *Pearson*. Berdasarkan hasil uji statistik, tidak ada hubungan antara asupan lemak jenuh dengan tekanan darah sistolik dan tekanan darah diastolik (p -value=0,183 and 0,333). Hal ini dikarenakan banyak faktor yang mempengaruhi tekanan darah. Kesimpulan dari penelitian ini adalah tidak ada hubungan antara asupan lemak jenuh dengan tekanan darah sistolik dan tekanan darah diastolik.

Kata Kunci: tekanan darah, lansia, asupan lemak jenuh

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INTRODUCTION

The elderly population (elderly people) has increased from time to time in Indonesia (Samodra et al, 2018). Currently the elderly population is around 25,66 million or 9,60% of the total population in Indonesia (BPS, 2019) and it is estimated that it will increase to 63,31 million or 20 percent in 2045 (BPS, 2018). As the elderly population increases, Life Expectancy has also increased which is an indicator of the achievement of national development in the health sector (Zaenurrohmah and Rachmayanti, 2017). Meanwhile, on the other hand, this has an impact on the transition of disease patterns, namely that infectious diseases have decreased and degenerative diseases have increased due to decreased organ function in the elderly, so that degenerative diseases often appear in the elderly, one of which is hypertension (Sartik et al, 2017).

Hypertension or high blood pressure can be said to be a *silent killer* because this disease does not show real symptoms like other diseases (Saputra and Indrawanto, 2013). Blood pressure is the pressure on the arteries from the blood vessels in the human body. Normal blood pressure is 120/80 mmHg (Perhi, 2019). Meanwhile, hypertension is a condition in which the measurement results of systolic blood pressure ≥ 140 mmHg and/or diastolic pressure ≥ 90 mmHg (Ministry of Health, 2019). Hypertension that is not treated immediately will have an impact on the brain, heart, kidneys and eyes (Wahyuningsih and Astuti, 2013). Hypertension is most often found in the elderly people (Hernawan and Rosyid, 2017). There is 59,9% prevalence of hypertension in elderly people ≥ 60 years in Shanghai, China (Yang et al, 2017). According to the 2018 Riskesdas data, the prevalence of hypertension in the elderly was found to be 63.2% occurring at the age of 65-74 years and 69.5% at the age > 75 years (Balitbangkes, 2019).

Consumption of fatty foods causes high cholesterol deposits in the blood which can become plaque and will clog blood vessels (Kartika et al, 2016). Saturated fat and cholesterol intake can increase the risk of developing heart disease and hypertension (Rawasiah et al, 2012). Consuming excess saturated fat can lead to atherosclerosis which increases blood vessel resistance (Lidiyawati and Kartini, 2014). The habit of consuming saturated fat has a 2,01 times greater risk of developing hypertension than those who do not have the habit of consuming saturated fat (Masfufah, 2015). High saturated fat intake in elderly women is associated with the risk of death from atherosclerosis (Bleckenhorst et al, 2015). Therefore, this study aims to determine the relationship between saturated fat intake and blood pressure in elderly women.

METHODS

This type of research is quantitative with a *cross sectional* approach. This research was conducted at Posbindu Flamboyan II Bekasi City in April 2020. Sampling in this study used a *total sampling* technique of 40 subjects. The selected subjects were interviewed using a research questionnaire. Bivariate analysis used the *Pearson* correlation test, which had previously been tested for normality using the *Shapiro Wilk Test*

RESULTS AND DISCUSSION

Subject Characteristics

The characteristics of the subjects studied, namely, age and level of education can be seen in Table 1. The increase in blood pressure in the elderly people is due to the accumulation of collagen in the muscle layer, so that the blood vessels will begin to narrow and become stiff (Saputra et al, 2013). Based on the level of education, the majority of the subject is high school/equivalent as many as 13 people (32,5%). Saputra et al. (2013) stated

that a person's education level affects their ability to receive information and process it before it becomes good or bad behavior which will have an impact on their health status.

Based on blood pressure checks, most of the subjects did not have high blood pressure as much as 55% (Table 1). The mean systolic blood pressure of the subjects was 138,98 mmHg and 81,32 mmHg for diastolic blood pressure. The standard deviation for systolic blood pressure is 18,28 and for diastolic blood pressure is 10,33. Blood pressure increases with age because the arteries slowly lose elasticity. An unhealthy lifestyle also affects heart damage, blood circulation and cholesterol levels (Arianti and Husna, 2015).

In the Table 2, most of the subjects with more saturated fat intake were 32 people (80%). The average intake of saturated fat consumed by the subjects was 6,75 grams/day with a standard deviation of 2,09. This is based on the results of interviews, a source of saturated fat that is consumed by many subjects is oil. The side dishes consumed by the subjects were mostly fried.

Table 1. Characteristics and research variables (n=40)

Variabel	n	%
Age (years)		
60-74	31	77,5
75-90	9	22,5
Last Education		
No school/did not Pass elementary school	8	220
School/equivalent	10	25
Junior High School/equivalent	3	7,5
Senior High School/equivalent	13	32,5
Academy /University	6	15
Blood Pressure		
Low	22	55
High	18	45
Saturated Fat Intake		
Enough	8	20
More	32	80

Source: Primary Data, 2020

Relationship between saturated fat intake and blood pressure in elderly women

The results of statistical tests showed that there was no relationship between saturated fat intake and systolic blood pressure ($p > 0,05$) (Table 2). And there is no relationship between saturated fat intake and diastolic blood pressure ($p > 0,05$) (Table 2). The correlation value shows a positive correlation, which means that the higher the saturated fat intake, then the higher the systolic and diastolic blood pressure.

Table 2. Relationship between saturated fat intake and blood pressure in elderly women

Variabel	Systolic Blood Pressure		Diastolics Blood Pressure	
	<i>R</i>	<i>p-value</i>	<i>r</i>	<i>p-value</i>
Saturated Fat Intake	0,215	0,183	0,157	0,333

Source: Primary Data, 2020

There is no relationship between saturated fat intake and blood pressure because saturated fat intake is not the only factor that affects blood pressure. Blood pressure can be influenced by various factors, such as consumption of sodium, potassium, magnesium, caffeine, history of hypertension, stress and physical activity (Ismuningsih, 2013). This is

reinforced by the results of research conducted by Kartikasari et al. (2012) which states that the habit of consuming fat is not a factor in the occurrence of hypertension. Likewise, research conducted by Adriaansz et al. (2016) showed that there was no significant relationship between consumption of fatty foods and the incidence of hypertension in the elderly ($p = 0,464$).

Research conducted by Widyastuti et al. (2016) obtained p value = 0,94 for systolic blood pressure and $p = 0,18$ for diastolic blood pressure. These results indicate there is no relationship between saturated fat intake and blood pressure. However, different results were obtained in the research conducted by Lidiyawati and Kartini (2014) which obtained $p = 0,02$, which means that there is a relationship between saturated fat intake and the incidence of hypertension. This is because menopausal women with excess saturated fat intake have a 5,76 times greater risk than menopausal women with good saturated fat intake to suffer from hypertension.

CONCLUSION

Based on the results of research conducted on 50 research participants from students of the Student Activity Unit for Martial Arts and Sports, Airlangga University, it was found that participants had an average high physical activity density and a normal resting heart rate. The relationship between physical activity density and resting heart rate has an inverse relationship, but the relationship is classified as weak. It is hoped for further research, an examination of anthropometry, stress, and food consumption of research subjects will be carried out.

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CONFLICT OF INTEREST STATEMENT

The authors declare that there is no conflict of interest.

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