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Research Article

Risk Screening, Vision Complaints, Hearing based on Age and Waist Circumference

Sahrir Sillehu[1*], Maryam Lihi[2]
[1,2]Sekolah Tinggi Ilmu Kesehatan Maluku Husada

Abstract

The aim of the study was to assess the relationship between age and obesity, to assess waist circumference and obesity. This type of quantitative research uses a cross-sectional design. The sample is 161 respondents. Data was collected using a questionnaire and measuring body mass index. Data were analyzed using the Pearson correlation test and linear regression analysis. The results showed that there were 144 respondents (89.4%) in the 18 - 25 year age category, 13 respondents (8.1%) for Body Mass Index for the first obesity category, and 12 respondents (7.5%) for obesity II. There is a relationship between age and waist circumference with a p-value of 0.0001, there is a relationship between age and body mass index with a p-value of 0.0001. There is a relationship between age and body weight with a p-value of 0.001. Age is a risk factor for waist circumference, BMI, weight, and hearing. As you get older, your waist circumference increases, your BMI increases, your weight increases and your age decreases your hearing ability. An obesity risk factor is age.

Keywords: obesity risk, body mass index, abdominal circumference, age.

Introduction

Non-communicable diseases are a threat and a double burden for developing countries, especially in Indonesia. The Ministry of Health stated that non-communicable diseases are the highest cause of death in Indonesia (Kemenkes RI, 2018). Sufferers of productive age who experience non-communicable diseases become very unproductive. This can be a problem of reducing human resources, burdening the state, and low human development index. The problem of non-communicable diseases can be overcome by controlling the causative factors. Risk factors for obesity include smoking, unhealthy diet, low physical activity, and consumption of alcohol (Kemenkes, 2019).

Nurhidayati's research (2020) explained that non-communicable diseases in the East Simeuleu Health Center area experienced an increase in 2017-2018. Hypertensive non-communicable diseases in the puskesmas increased by 0.30%, diabetes mellitus by 0.23%, heart disease by 0.10%, obesity by 0.15%, and stroke by 0.2% due to high cases, the Simeuleu Community Health Center focuses on aspects of treatment and counseling for sufferers (Nurhidayati et al., 2020).

Obesity poses a threat to diseases such as obstructive pulmonary disease, diabetes, cardiovascular cancer, and sleep disorders. Obesity is also related to death (Fruh, 2017). For 3 years Indonesia has experienced a severe risk of the COVID-19 Pandemic in patients who are obese (Schäffeler et al., 2022). So this research was conducted to look for risk factors associated with obesity so that preventive measures can be taken.

Non-communicable diseases can be a threat to society and a burden on health care facilities. anthropometric measurement screening to measure the risk of non-communicable diseases from obesity risk factors at one of the tertiary institutions in Maluku City, aiming to determine the classification of obesity based on age. This problem is reviewed using the obesity classification paradigm of the Ministry of Health (2020) and Utami (2022).

The research problem is formulated: is there a relationship between age and abdominal circumference? Is there a relationship between age and body mass index? Is there a relationship between age and weight? Is there a relationship between age and vision complaints? Is there a

**corresponding author: Sahrir Sillehu*
Sekolah Tinggi Ilmu Kesehatan Maluku Husada
Email: sahrirsmh@gmail.com
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relationship between age and hearing loss?. This study tested 5 research hypotheses, namely: 1) There is a relationship between age and abdominal circumference. 2) There is a relationship between age and mass index. 3) There is a relationship between age and body weight. 4) There is a relationship between age and vision complaints. 5) There is a relationship between age and hearing

Method

The research was conducted in September - December 2022 at the Maluku Husada College of Health. This study used a cross-sectional sampling design. The population is all lecturers, educational staff and students. The research population was 256 people. The sample is determined by accidental sampling technique. Samples that meet the criteria: 1) are willing to be research samples. 2) lecturers, educational staff and students who are active and not on leave during research. 3) not in a state of illness. Samples that meet the inclusion criteria are numbered 166 repondent.

The research variables were age, sex, height, weight and abdominal circumference, vision complaints and ear complaints. Data were collected using a questionnaire. Anthropometric measurements were made to measure height, weight, and abdominal circumference. Data were analyzed using Pearson correlation analysis.

Results

Table 1. Characteristics of Respondents

Variable	Frequency (f)	Percentage (%)
Age		
18 – 25	149	89,4
26 – 33	8	5,0
34 – 41	9	5,6
BMI		
Underweight (< 17)	6	3,7
Light undeweight (17 – 18,4)	36	22,4
Normal (18,5 – 25)	94	58,4
Obesity I (25,1 – 27)	13	8,1
Obesity II (> 27)	12	7,5
Vision complaints		
No complaints	15	9,3
There are complaints	146	90,7
Hearing complaints		
No complaints	151	93,8
There are complaints	10	6,2

Table 1: The majority are 149 (89.4%) aged 18-25 years, based on the majority normal body mass index (18.5-25) of 94 respondents (58.4%). Vision complaints from 15 respondents (9.3%) and hearing complaints from 10 respondents (6.2%).

Table 2. Correlation Test for Age, Waist Circumference and Obesity Risk

Variable	Pearson correlation	Significant
Age * Waist circumference	0,335	0,001*
Age * IMT	0,414	0,001*
Age * weight	0,395	0,001*
Age * vision	0,346	0,075
Age * hearing	- 0,169	0,032*

Table 2. The results of the hypothesis test shows that there is a relationship between age and abdominal circumference with a p-value of 0.001 and a correlation value of 0.335. There is a relationship between age and body mass index with a p-value of 0.001 and a correlation value of

0.414. There is a relationship between age and weight with a p-value of 0.001 and a correlation value of 0.395. There is no relationship between age and vision complaints with a p-value of 0.075. There is a relationship between age and hearing with a p-value of 0.032 and a correlation value of 0.169.

Discussion

The results showed that age is a factor related to waist circumference, body mass index, weight and hearing. It has similarities with Nugroho's research (2020) that gender and age have a relationship with obesity. Gender is related to obesity, women have a risk of experiencing obesity by 0.59 times compared to male sex. Large Oods ratio as a protective factor. Research was conducted on groups of adolescents in Indonesia, groups of adolescents aged 14 years or less than 14 years have a 1.4 times risk of experiencing obesity. Even though the author gives an opinion at the age of more than 14 years and getting older teenagers have a desire to pay attention to weight because they have an awareness of being attracted to the opposite sex so as to maintain an ideal body shape and go on a diet so that teenagers do not experience obesity (Nugroho, 2020).

Waist circumference in boys is larger than girls, and boys who have exercise habits tend to consume less snacks. Obesity has a relationship with a wider waist circumference than those with normal weight (Lukács et al., 2018). Other researchers analyzed using different variables than what researchers did, explaining that obesity is influenced by heredity. Research conducted in elementary schools shows that parents who are obese, children tend to be at risk of obesity, also supported by lifestyle and food habit factors following parental habits (Jannah & Utami, 2018). Relevant to this study, previous researchers explained that obese mothers tend to have obese children (Chou & Pei, 2010).

Excess weight was supported by previous researchers through a survey conducted on 212 students, lecturers and staff and at one of the tertiary institutions in City X found respondents who were overweight (17.9%), obese I (17%), and obese II. (12.3%). It was identified that respondents who were overweight, obese I and obese II had a habit of eating snacks and the types of food consumed were sweet cakes and fried foods (Utami et al., 2022). Obese girls are more likely to consume food while watching television (Chou, 2010),(Lukacs, 2022).

Being overweight is also associated with socioeconomic status. The prevalence of overweight in South Africa is quite high in the female group. The study was conducted on 508 volunteers. Demographic social factors such as the mother as the head of the family has a risk of 3.5 times obesity, a history of 2 -3 pregnancies has a 2.4 times chance of obesity (Modjadji, 2020). The risk of being overweight is twice as high for working mothers. Working mothers do not have time to control their children's eating patterns, children choose ready-to-eat, fast and delicious meals that do not pay attention to a balanced nutritional consumption pattern (Banjarnahor et al., 2022),(Yaqoob et al., 2022).

The same study was conducted to determine the sociodemographic factors that affect body weight in women. The results of logistic regression analysis, the age factor determines overweight. The chance of being overweight is 2.4 times higher for housewives than working mothers (Modjadji, 2020). The difference in overweight in female and male students is significant and related to physical activity (Al-Hassan et al., 2020). This study did not link obesity with education because the sample was in the same group as academics. Previous studies have stated that a high level of education is positively correlated with the consumption of vegetables and fruit and healthy eating patterns (Alakaam et al., 2022).

Conclusion

The tendency of obesity is related to age, the older you are the more likely you are to experience an increase in waist circumference, body mass index, and weight gain. Increasing age is accompanied by weight gain because getting older, the activities carried out will decrease and cause body fat deposits. It is necessary to carry out health screening which is a risk for non-communicable diseases to avoid the impact of the risks of increasing age and increasing body weight, as well as preventing an increase in the prevalence of non-communicable diseases in students, lecturers and staff.

This research has implications for research respondents to maintain their weight without being obese by paying attention to nutritional intake and exercise. This research also provides input to the Ministry of Health of the Republic of Indonesia to plan workers' health programs in the workplace, occupational nutrition checks and physical activity.

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