

Disease Characteristic of Obese Patients with Seek Treatment at RSUD Dr. H. Chasan Boesoerie Ternate

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ABSTRACT

Introduction: Obesity is the accumulation of excess fat due to an imbalance in energy intake with the energy used by the body. Obesity can be differentiated based on the distribution of fat into 2, namely central obesity, which is also called "apple shape obesity" or "android obesity", which is more often found in men, and peripheral obesity which is also called "gynecoid obesity" or "pear shape obesity", which is more often found in women. Some of the risk factors for obesity such as genetics, socioeconomic status, environment, and psychology.

Method: This study aims to determine the characteristics of obese patients who seek treatment at RSUD Dr. H. Chasan Boesoerie Ternate in 2019. This study used a descriptive design with a cross-sectional method with a total sample was 95 medical record data for obese patients. This study used secondary data from medical records of obese patients at RSUD Dr. H. Chasan Boesoerie Ternate in 2019.

Result: Characteristics of diseases in obese patients at RSUD Dr. H. Chasan Boesoerie Ternate in 2019 were found to be 20-60 years 75 people (80%), women 69 people (72.6%), work as housewives 54 people (56.8%), the level of high school education was 36 people (37.9%), obesity I 68 people (71.6%), and the type of type 2 diabetes mellitus 46 people (48.4%).

Conclusion The highest distribution of obese people was found the most in female, the age group of 20-60 years, and the most comorbidity in diabetes mellitus.

Keywords: Characteristics; diabetes mellitus; obesity



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Introduction

Obesity is a state of imbalance between incoming energy and outgoing energy over a long period of time. The amount of energy intake from digested food exceeds the energy used for metabolism and daily activities. This excess energy will be stored in the form of fat and adipose tissue so that it can result in weight gain.¹

In the last three decades, the worldwide prevalence of obesity has increased by 27.5% for adults and 47.1% for children. The number of adults aged > 18 years who are obese is 650 million out of a total of > 1.9 billion adults who were overweight in 2016. Around 13% of the world's adult population, including 11% of men and 15% of women, were obese in 2016. Based on data from the 2018 Riskeddas, the incidence of obesity in Indonesia has a prevalence of obesity in adults \geq 18 years of 21.8%. The highest percentage of obesity was in the province of North Sulawesi at 30.2%, and the lowest was in East Nusa Tenggara at 10.3%.^{2,3,4}

The results of various studies reveal that the morbidity rate in obese people is higher than in people with normal weight, which means that obese people are more likely to get sick than people with normal weight. Likewise, the death rate (mortality) in obese people is higher when compared to the death rate in people with normal weight. Research conducted by Kinlen (2018) shows that obesity is associated with increased mortality and various complications such as diabetes, heart disease, dementia, and cancer. Even low levels of overweight are associated with an increased risk, and weight loss remains the best way to manage complications. In another research by Dali(2017)the most common morbidity effect of obesity in the case group (obesity) is hypertension, which is 51.7%.^{5,6}

Method

This research is a descriptive study with a cross-sectional method using secondary data in the form of medical records taken from RSUD Dr. H. Chasan Boesoirie Ternate. This research was conducted in May - June 2022. The population of this study was obese patients at Dr. H. Chasan Boesoirie Ternate 2019.

The research sample was taken in total sampling and all populations that met the criteria were used as samples. Based on how to obtain data, the data collected is secondary data. Secondary data was obtained by looking at the patient's medical record results. Data processing is carried out electronically using the Statistical Product and Service Solution (SPSS) application and is described in tabular form.

Result

This research was conducted by collecting secondary data from the medical records of obese patients who sought treatment at RSUD Dr. H. Chasan Boesoirie Ternate in 2019. The sample that met the inclusion

criteria obtained 95 medical record data from the research conducted.

Characteristics of obese people by age

Table 1. Characteristics of obese people by age group

Age	Frequency	%
20-60	76	80%
>60	19	20%
Total	95	100%

Based on the table above, it is known that most incidents occurred in the age group of 20-60 years, with a total of 76 cases or 80%, while in the age group >60 years, namely 19 people or 20%.

Characteristics of obese people by gender

Table 2. Characteristics of obese people according to gender

Gender	Frequency	%
Male	26	27,4%
Female	69	72,6%
Total	95	100%

Based on the distribution of obese people according to gender, the most incidents were in female, with 69 cases or 72.6%, followed by male with 26 cases or 27.4%.

Characteristics of obese people based on work

Table 3. Characteristics of obese people work

Work	Frequency	%
Housewife	54	56,8%
Private employee	4	4,2%
Civil servant	20	21,1%
Farmer	2	2,1%
BUMN employee	1	1,1%
Self-employed	9	9,5%
Laborer	1	1,1%
Unemployed	4	4,2%
Total	95	100%

Based on the distribution of obese people by type of work, it was found that the highest number of incidents occurred in patients who worked as housewives, with a total of 54 people or 56.8%, and the least number of cases were found in laborer and BUMN employee with each 1 person or 1.1%.

Characteristics of obese people based on education background

Table 4. Characteristics of obese people according to education

Education background	Frequency	%
Elementary school	25	26,3%
Junior High School	7	7,4%
Senior High School	36	37,9%
Bachelor	23	24,2%
D1/D2/D3	1	1,1%
Unexplained	3	3,2%
Total	95	100%

Based on the distribution of obese people based on education, it was found that the most incidents occurred at the high school education level, with a total of 36 people or 37.9%, and the least incidents were found at the D1/D2/D3 level with 1 person or 1.1%.

Characteristics of obese people based on body mass index

Table 5. Characteristics of obese people according to body mass index

BMI	Frequency	%
Obese I (25 – 29,9)	68	71,6%
Obese II (≥ 30)	27	28,4%
Total	95	100%

Based on the distribution of obese people according to Body Mass Index (BMI), the most obese patients were found in the Obesity I group (25-29.9) with a total of 68 people or 71.6%, followed by obesity II (≥ 30) with 27 people or by 28.4%.

Characteristics of obese people based on comorbidities

Table 6. Characteristics of obese people according to comorbidities

Type of disease	Frequency	%
Type 2 DM Grade 1	46	48,4%
hypertension	15	15,8%
CHD	11	11,6%
Cholelithiasis	5	5,3%

Colorectal Cancer	2	2,1%
Osteoarthritis Genu	4	4,2%
Breast cancer	11	11,6%
Hemorrhagic Stroke	1	1,1%
Total	95	100%

Based on the distribution of obese people according to comorbidities, it is known that the highest incidence occurred in type 2 diabetes mellitus with a total of 46 people or as much as 48.4%, and the least was found in stroke, namely 1 person or 1.1%.

Discussion

Age

Based on the age group, the most incidents occurred in the 20-60 year age group with a total of 76 cases or 80%, while in the >60 year age group, there were 19 people or 20%. This research is in line with research conducted by Armanto et al. (2021), who assessed the characteristics of obesity based on age vulnerability in the Nganganamala sub-district, Bau-Bau city, found that the highest incidence was in the age group 20-60 years of 89.8%. Vulnerable age affects the incidence of obesity; the older you are, the greater the risk of obesity. Obesity in adulthood impacts health, where weight gain and obesity are risk factors for increasing the incidence of non-communicable diseases.⁷

Obesity tends to increase with age and reaches its peak in adulthood. As we get older, the body's metabolic processes will tend to decrease, which will cause muscle function to decrease and body fat levels to increase. Suppose it is not balanced with a healthy lifestyle, such as regulating diet and physical activity. In that case, there will be an accumulation of body fat which will increase the risk of obesity.^{8,9}

Gender

Based on the distribution of obese people according to gender, the most incidents were in women with 69 people or 72.6%, followed by men with 26 cases or 27.4%. This study's results align with research conducted by Arifani et al. (2021), which assessed risk behavior factors associated with the incidence of obesity in adulthood in Banten province in 2018 and found that most of the research subjects were women, namely 53%. Alamsyah et al. (2019) research on the determinants of the incidence of obesity in adults in the working area of the Simpang Tiga Public Health Center in Pekanbaru City is also in line with this study, where the proportion of respondents with female gender obesity was 53.5%.^{10,11}

Research by Hassan et al. (2022) regarding the prevalence of obesity and overweight in adults in Middle Eastern countries over the past two decades found that obesity was higher in women than men. Women tend to have lower physical activity than men. Increasing age in women will cause a loss of muscle mass by as much as 30-50%. If this is not balanced with sufficient physical activity, it can cause the body's ability to process food to decrease and result in fat accumulation.^{10,12}

Type of work

Based on the distribution of obese people by type of work, it was found that the most incidents occurred in patients who worked as housewives (IRT), namely 54 people or 56.8%, and the least was found in laborers and BUMN workers, namely 1 person or by 1.1%. This study's results align with research conducted by Septiyani et al. (2020) regarding obesity and central obesity in adults in urban areas in Indonesia, with housewives (IRT) as the highest percentage, namely 37.4%. Another study conducted by Sundari et al. (2015) is also in line with the results of this study, where the highest incidence of obesity was among respondents who worked as housewives, namely 77.3%.^{13,14}

Based on occupation, the prevalence of obesity is higher among those who work as housewives. Factors that influence the incidence of obesity among housewives include low physical activity. Another factor that affects housewife obesity is energy intake which is more significant than energy expenditure in the long term. Jobs with low physical activity will be an opportunity for fat accumulation in the body. Jobs with low activity, such as teachers, traders, housewives, and retirees generally have more sedentary activities. In contrast jobs such as farmers, ranchers, employees, and entrepreneurs who have high activity will expend more energy. In addition, in several studies the use of hormonal contraception (injections, pills, and implants) in housewives causes weight gain, this is caused by an increase in the hormones estrogen and progesterin in the body which cause fluid retention and increase appetite to increase body weight.^{15,16}

Education Background

Based on the distribution of obese people based on education, it was found that the most incidents occurred at the high school level with a total of 36 people or 37.9%, and minor incidents were found at the D1/D2/D3 level with a total of 1 or 1.1%. The results of this study are in line with research conducted by Sumael et al. (2020) concerning the relationship between physical activity and the incidence of obesity at the Pangolombian health center, where it was found that most of the respondents had the last high school education (SMA), namely 55.3%.¹⁷

Education influences knowledge of nutrition. The higher a person's education, the more nutritional knowledge he has. Knowledge of good nutrition also causes a person to have good eating habits, so the possibility of consuming unhealthy foods decreases. The lower the education, the higher the risk of obesity. The level of education affects food consumption through the selection of food ingredients. People with higher levels of education tend to choose foods that are good for their bodies compared to people with lower levels

of education. Someone with a low level of knowledge will often choose whole food without understanding the balanced nutritional intake needed by the body. So, too many carbohydrates are consumed in one serving of food. Someone with good knowledge about obesity still engages in unhealthy behaviors such as a sedentary lifestyle and excessive eating when experiencing stress. Knowledge is part of behavior, but this does not guarantee that people with good knowledge also have good behavior. Because a person's behavior is also influenced by other factors.^{5,18}

Body Mass Index

Based on the distribution of obese people according to body mass index (BMI), the most obese patients were found in the Obesity I group (25-29.9) with a total of 68 people or 71.6%, followed by obesity II (≥ 30) with 27 people or by 28.4%. This research is in line with research conducted by Masi et al. (2018) regarding the relationship between obesity and the incidence of diabetes mellitus in the working area of the Ranomut Public Health Center in Manado City, where the most common distribution was Obesity I, which was 37.3%. Obesity can occur due to an imbalance between the energy from food that enters greater than the energy used by the body.^{13,19}

Comorbidities

Based on the distribution of obese people according to comorbidities, it is known that the highest incidence occurred in type 2 diabetes mellitus with a total of 46 or as much as 48.4%, and the minor incidence was found in stroke, namely 1 or 1.1%. This study is in line with research conducted by Masi et al. (2018) concerning the relationship between obesity and the incidence of diabetes mellitus in the working area of the Ranomut Public Health Center in Manado City was found that 57.6% of respondents had diabetes mellitus. In a study conducted by Lisna et al. in 2018, which discussed the relationship between obesity and the incidence of type 2 diabetes mellitus in women of childbearing age in the working area of the Pintupadang Health Center, said that there was a relationship between obesity and the incidence of type 2 diabetes.^{19,20}

Obesity causes chronic, low-grade inflammation involved in type 2 diabetes mellitus. Obesity is associated with a chronic, low-grade inflammatory condition with progressive infiltration of immune cells in obese adipose tissue. Cytokines released by immune cells and adipose tissue adipokines increase tissue inflammation and induce insulin resistance.²¹

The mechanism responsible for the high state of oxidative stress in obesity is unknown, but what is clear is that adipose tissue is an essential mediator of oxidative and inflammatory stress because it contributes to the production of free radicals and proinflammatory cytokines, including IL-6 and TNF- α . Inflammation as a manifestation of increased oxidative stress, which increases in someone with obesity. The mechanism of inflammation in obesity is related to the presence of adipose tissue, which produces hypoxia-induced adipokines and acute-phase proteins. Hypoxia will be generated during the overgrowth of adipose tissue during obesity. Adipose tissue produces 25% of systemic IL-6, so that this adipose tissue can cause low-

grade systemic inflammation in people with excess body fat. ²²

Conclusions

Based on research conducted at RSUD Dr. H. Chasan Boesoirie Ternate regarding the disease characteristics of obese people. In 2019, the highest distribution of obese people was found in the age group of 20-60 years with 75 people (80%), female gender with 69 people (72.6%), work as housewives 54 people (56.8%), high school education level 36 people (37.9%), obesity body mass index I 68 people (71.6%), and diabetes mellitus type 2 comorbidities 46 people (48.4%). As for the suggestions from this study for future researchers, it is hoped that further research will be carried out by taking more samples so that they can describe more of the characteristics of the variables studied. H. Chasan Boesoirie Ternate to further improve the quality of service in terms of preventing obesity such as making leaflets as a means of educating patients about what factors influence the incidence of obesity, for obese patients it is advisable to pay more attention to their conditions and get used to adopting a healthy lifestyle in everyday life and also control eating patterns and increase physical activity, it is hoped that the government can carry out socialization programs regarding the dangers of obesity and ways to prevent obesity.

Conflict of Interest

There is no conflict of interest

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