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Characteristics of Type II Diabetes Mellitus Patients in the Elderly in the Work Area of Public health center Harapan Raya Pekanbaru

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Introduction

Law of the Republic of Indonesia Number 13 of 1998 concerning the welfare of the elderly, what is meant by elderly (Elderly) is someone who has reached the age of 60 years and over. The increasing number of elderly people in Indonesia has both positive and negative impacts. It has a positive impact, if the elderly population is healthy, active and productive. On the other hand, the large number of the elderly population becomes a burden if the elderly have a decline in health which results in an increase in the cost of health services, a decrease in income / income, and an increase in disability.¹

The 21st century has a special challenge in the health sector from the increasing number of elderly people, namely the emergence of degenerative problems and Non-Communicable Diseases (PTM). These diseases will cause problems if not addressed or prevented, because this will be a chronic and multi-pathological disease.²

Abstract

Introduction: Specific challenges in the health sector continue to increase as seen from the emergence of increasing degenerative problems and non-communicable diseases in the elderly, one of which is Diabetes Mellitus. Diabetes Mellitus is a chronic disease that is still a major problem in Indonesia.

Objectives: To determine the characteristics of Type II Diabetes Mellitus Patients in the Elderly in the Work Area of Public Health Center Harapan Raya Pekanbaru.

Methods: A descriptive quantitative study with cross-sectional approach

Results: The results of the research conducted using univariate analysis showed that the majority of ages 45-65 were at risk of suffering from Diabetes Mellitus Type II, namely 21 people (70%), the majority of men were at risk of suffering from Type II Diabetes Mellitus, namely 22 people (73.3) and The majority of respondents' education is high, namely 23 people (76.7%). Suggestion It is hoped that health workers will provide information to the public regarding the prevention and treatment of Type II Diabetes Mellitus in the Elderly.

Conclusion: The majority of respondents 'ages are at risk, the majority of respondents are male and the majority of respondents' education is high.

Keywords: diabetes mellitus, gender, education, age

The physiological function of the elderly has decreased due to the aging process so that many non-communicable diseases appear in the elderly. In addition, degenerative problems reduce the body's resistance so that it is prone to infection with infectious diseases. Results of Riskesdas 2013, Most diseases in the elderly are Non-Communicable Diseases (PTM), including hypertension, arthritis, stroke, Chronic Obstructive Pulmonary Disease (COPD), and Diabetes Mellitus (DM).³

Diabetes Mellitus is a dangerous disease known by the Indonesian people as diabetes. DM is a metabolic disorder that occurs chronically or chronically because the body does not have enough insulin hormone due to disturbances in insulin secretion. the insulin hormone that doesn't work properly or both.⁴ There are two types of diabetes mellitus, namely Diabetes mellitus type I (insulin-dependent diabetes mellitus) and diabetes mellitus type II (non-insulin-dependent diabetes mellitus). Type I diabetes mellitus is characterized by the loss of insulin-producing cells in the pancreatic langhernas islands resulting in a lack of insulin in the body. Type II diabetes mellitus occurs due to the inability of the body to respond properly to insulin activity produced by the pancreas (insulin resistance). so that it does not reach normal glucose levels in the blood. Diabetes mellitus type II is more common and covers 90% of all diabetes cases worldwide.⁵

The 8th edition of Diabetes Atlas shows a fantastic value related to the number of DM sufferers in the world in 2017, which is 426 million people. North America and the Caribbean 10.7%, South and Central America 6.2%, Africa 3.8%, Europe 13.6%, West Pacific 37.3%, Middle East and North Africa 9.2 % of people and in Southeast Asia as much as 19.2%. Where the most age is 20-64 years as much as 76.7% and with the age 65-74 years as much as 23.3%. The *International Diabetes Federation* (IDF) predicts the incidence of Diabetes Mellitus will increase drastically in 2045 in Southeast Asia, Africa, Middle East, and North Africa region with their respective prevalence increasing from 2017 to 2045 by 84%, 156%, and 110%.⁶

In general, the prevalence rate of diabetes has increased quite significantly in the last 5 years.³ In 2013, the prevalence rate of diabetes in adults reached 6.9% and in 2018 the figure continues to increase to 8.5%. A total of 1,785 diabetes mellitus sufferers in Indonesia experienced complications of neuropathy (63.5%), retinopathy (42%), nephropathy (7.3%), macrovascular (6%), and diabetic foot (15%).As for how to prevent complications in DM sufferers, namely controlling sugar levels, routine blood sugar checks, consumption of hypoglycemia drug sugar, light physical exercise, and adhering to a low-calorie diet.⁷ Glucose is a fraction of carbohydrates that will be absorbed by the body in the bloodstream. Glucose acts as the main fuel in the body whose function is to produce energy. Effective efforts to prevent and control diabetes must be focused on risk factors accompanied by regular and continuous monitoring of its development because the general risk factors for non-communicable diseases in Indonesia are still relatively high. Blood glucose is influenced by several factors, including trigger factors in this case the occurrence of wrong diet, medication, age, gender, lack of activity and so on.^{8,9}

Based on the background description above, a research problem is formulated that aims to find out "Characteristics of Type II Diabetes Mellitus Patients in the Elderly in the Work Area of Puskesmas Harapan Raya Pekanbaru".

Methods

This research is a descriptive quantitative study with a cross-sectional approach. The population in this study were all people with diabetes mellitus who were in the working area of Puskesmas Harapan Raya Pekanbaru, amounting to 83 people With the sampling technique using the consecutive sampling method, all objects that come sequentially and meet the criteria (elderly with type II diabetes mellitus) are included in the study, until the required number of subjects is fulfilled, namely 30 samples. The research instrument used a questionnaire. Data analysis was performed univariately to see the frequency distribution.

Results

The results of the study regarding the characteristics of Type II Diabetes Mellitus Patients in the Elderly in the Work Area of the Harapan Raya Pekanbaru Health Center can be seen in the following table:

Table 1. Frequency Distribution of Respondent Characteristics Based on Age, Gender, and Education in the Work Area of the Harapan Raya Puskesmas Pekanbaru

Characteristics	Frequency (n=30)	Percentage (%)
Age		
Risk (45-60)	21	70
No risk (40-44)	9	30
Total	30	100
Gender		
female	8	26,7
male	22	73,3
Total	30	100
Level Education		
Low (SD-SMP)	7	23,3
High (SMA-PT)	23	76,7
Total	30	100

The table above shows that the majority of respondents are at the risk age (45-60 years), namely 21 people (70%) and the minority are at the non-risk age (40-44 years), namely 9 people (30%). The majority of respondents were male, namely 22 people (73.3%) and a minority of female sex, namely 8 people (26.7%). The majority of respondents had higher education, namely, 23 people (76.7%), and a minority had low education, namely 7 people (23.3%).

Discussion

Diabetes mellitus (DM) or diabetes, is a degenerative disease that is dangerous for humans today. Changes in different human lifestyles are one of the reasons why diabetes is increasingly afflicting people. Various types of life convenience and various types of foods that contain high levels of sugar and fat are a problem because of the increasing number of DM sufferers in Indonesia and other countries in the world.¹⁰ Conceptually, the age factor is one of the irreversible risk factors.¹⁹ Someone who is over 45 years of age will be pre-DM and it is recommended to do blood sugar checks once a year to prevent diabetes. at this age, it is predicted to be related to degenerative problems experienced by elderly respondents.¹¹ A person does not mean that the person will experience DM disease, because basically a person's age cannot be used as a reference for whether the person has increased blood sugar levels or has DM with age, but with increasing age the risk of experiencing DM disease increases due to the process. degenerative that occurs in humans.¹²

Research conducted by Trisnawaty states that age has a relationship to blood sugar levels because it increases the incidence of type 2 diabetes because aging can decrease insulin sensitivity so that it affects glucose levels in the blood that cannot be metabolized optimally.¹³ The same results were also shown in a study conducted by Jelantik showing that the highest number of diabetes mellitus sufferers in the Mataram Public Health Center were at the age of ≥ 45 years (90%).¹⁴ This is supported by research conducted by Kurniawaty that age ≥ 50 years can increase the incidence of type II diabetes mellitus because aging causes decreased insulin sensitivity and decreased body function for glucose metaolism.¹⁵

The research results also show that the majority of respondents are male. In theory, no one explains that the male gender is more at risk of experiencing type II diabetes mellitus compared to women or vice versa. The results of previous research conducted by Reswan found

that the highest incidence of glucose was in elderly women.¹⁶ Education is an effort to develop a personality, both formally and informally, which lasts a lifetime. Education is the process of changing one's attitudes and behavior through teaching and training efforts. Increased knowledge is not absolutely obtained informal education, but can also be obtained in non-formal education.¹⁷ From the results of research in the field, it is found that respondents with high education actually experience diabetes mellitus more than those with low education. Researchers assume this means that even though the majority of respondents' education is high if their attitudes and beliefs are contrary to health, it can result in a decrease in their health status. Apart from education, there are several factors that influence a person's health behavior, namely knowledge, attitudes, beliefs, traditions, and others.¹⁸

Conclusion

From this study, it can be concluded that the majority of respondents' ages are at risk, the majority of respondents are male and the majority of respondents' education is high.

Conflict of Interest Declaration

This research is independent of the conflict of interest of both individuals and organizations

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