

Conference Paper

Diabetes Mellitus Cases by Gender in the North Buton Regency in the 2018-2020 Period

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Abstract.

Diabetes mellitus or also called DM is a disease characterized by increased blood glucose levels as a result of the body's physiological failure to regulate glucose metabolism. The prevalence of people with diabetes mellitus in the world is increasing year by year. Indonesia is ranked with the fourth highest cases of diabetes mellitus in the world. The objective of this study is to identify cases of diabetes mellitus based on gender in the North Buton Regency in the 2017-2020 period. This is a survey research utilizing the health report data of the North Buton Regency Health Office in the 2017-2020 period, which includes data on the DM cases based on gender. The type of research data is numerical. The research data is presented in the form of graphs with narration. The results showed that the number of DM cases in North Buton Regency in 2017 the highest number of DM cases was at the Kulisusu Health Center with 138 cases, in 2018 the highest was at the Waode Buri Health Center with as many as 46 cases, in 2019 the highest DM case number was at the Kulisusu Health Center with as many as 73 cases. In 2020 the highest cases was at the Kulisusu Health Center with as many as 117 cases, where DM cases in women were higher than men.

Keywords: Diabetes Mellitus, Gender, Female, Male

1. INTRODUCTION

Diabetes is a serious non-communicable disease in which insulin cannot be produced optimally by the pancreas [1, 2]. Diabetes Mellitus is commonly called the silent killer because this disease can affect all organs of the body and cause various kinds of complaints [3, 4]. Other diseases that will be caused such as impaired vision, cataracts, heart disease, kidney disease, sexual impotence, wounds that are difficult to heal and rot/gangrene, lung infections, blood vessel disorders, stroke and so on. Sometimes people with diabetes who are already severe undergo limb amputation due to decay [5, 6].

Diabetes Mellitus is the sixth leading cause of death in the world. This is revealed by the World Health Organization (WHO) [7]. The data showed that deaths caused by

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diabetes were around 1.3 million and those who died before the age 70 years old were 4 percent. The majority of diabetes deaths at the age of 45-54 years old happen in urban residents compared to people living in rural areas. The prevalence of diabetes in Indonesia ranks seventh highest in the world after China, India, USA, Brazil, Russia and Mexico [8].

Based on the 2007 Riskesdas data analysis conducted by Irawan, it was found that the highest prevalence of diabetes mellitus occurred in the age group above 45 years which is 12.41%. This analysis also shows that there is a connection between the incidence of diabetes mellitus and its risk factors, namely gender, marital status, education level, occupation, physical activity, smoking habits, alcohol consumption, Body Mass Index (BMI), waist circumference and age. The number of diabetes mellitus is 16.4% for overweight and 6.5% for obesity in the population. It can be prevented if overweight and obesity are intervened [9].

The research conducted by Trisnawati and Setyorogo [10], found that age, family history, physical activity, blood pressure, stress and cholesterol levels were related to the type 2 of diabetes mellitus. Age, gender, area status, employment status, obesity, hypertension and dyslipidemia are contributing factors in triggering the occurrence of diabetes mellitus.

Based on the above phenomena, this study was conducted to identify cases of diabetes mellitus based on gender in the North Buton Regency for the 2017-2020 periods.

2. METHODOLOGY OF THE STUDY

The type of this research is a survey research by utilizing the health report data of the North Buton District Health Office for the 2017-2020 period involving data on the incidence of DM by gender. The research sample is diabetes mellitus patient. The type of research data is numerical and the research data is presented in the form of a graph with narration.

3. RESULT OF THE STUDY

The result of the research is presented using a bar chart with an explanation that can be presented as follows:

Figure 1 shows that in 2017 the highest number of DM cases was at the Kulisusu Health Center as many as 138 cases, in 2018 the highest was at the Waode Buri Health

Center as many as 46 cases and in 2019 the highest DM case number was at the Kulisusu Health Center as many as 73 cases. In the year 2020 the highest was in Kulisusu Health Center as many as 117 cases.

Figure 2 showed that in the year 2017 and 2018 the highest DM cases in men were at the Labuan Health Center, in 2019 the highest at the Waode Buri Health Center and in 2020 the highest at the Kulisusu Health Center.

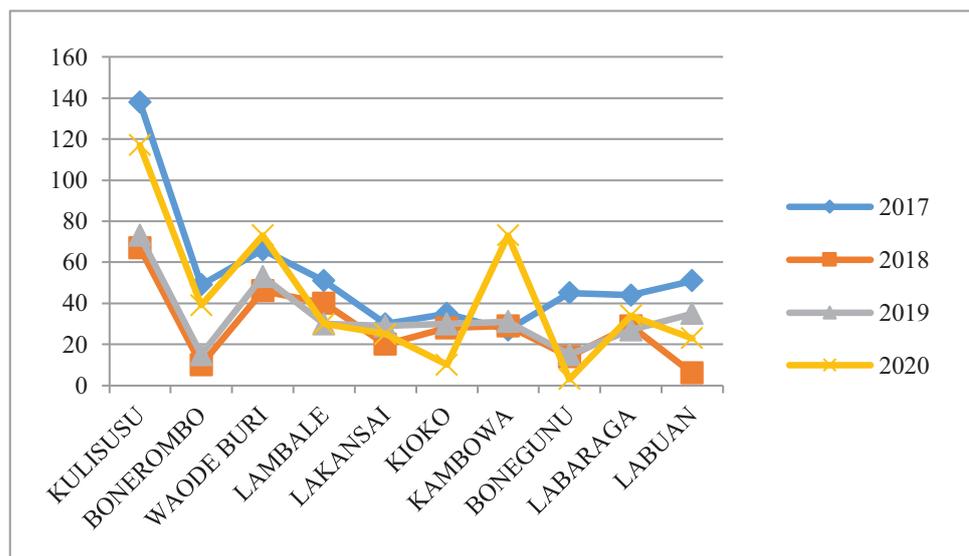


Figure 1: DM cases in the North Buton Regency in the year 2017-2020.

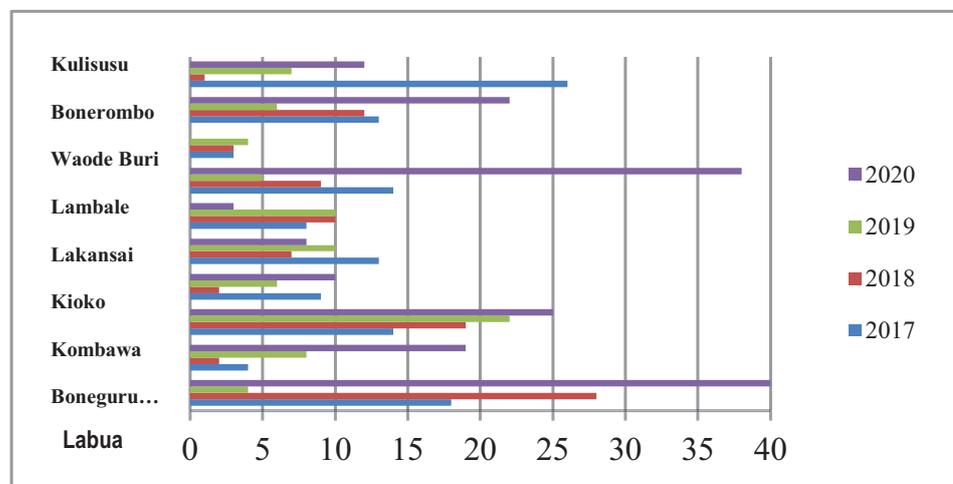


Figure 2: DM cases spread in men in the North Buton Regency for the period 2017-2020.

Figure 3 showed that in the year 2017 and 2018 the highest DM cases in women were at the Kulisusu Health Center, in 2019 the highest at the Waode Buri Health Center and in 2020 the highest at the Kulisusu Health Center.

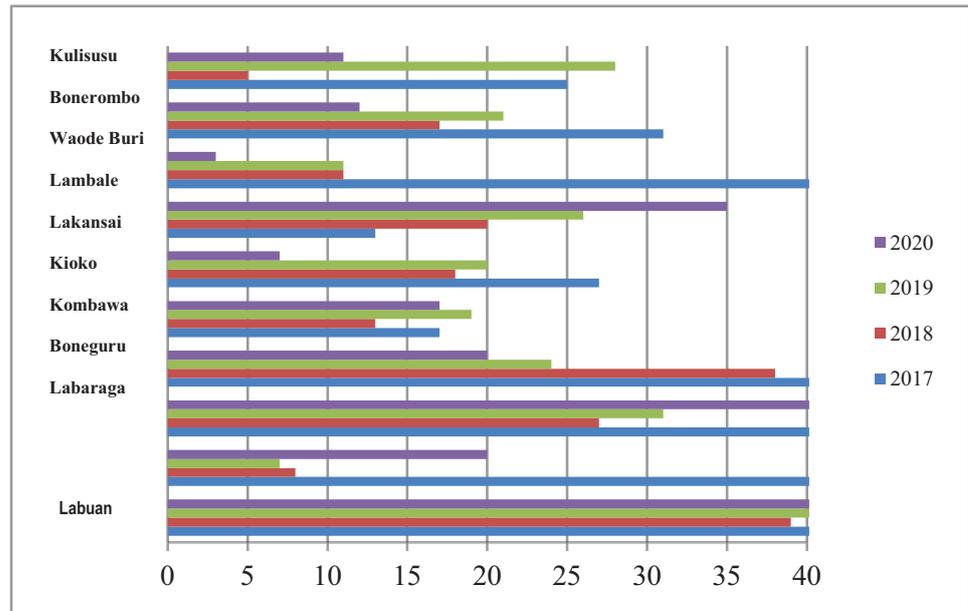


Figure 3: DM cases spreads among women in North Buton Regency for the period 2017-2020.

4. DISCUSSIONS

According to the research data, it shows that the number of DM cases in the North Buton Regency is very worrying where in the 2017 the highest number of DM cases was at the Kulisusu Health Center as many as 138 cases, in 2018 the highest was at the Waode Buri Health Center as many as 46 cases, in 2019 the highest DM case number was at the Puskesmas. Kulisusu had 73 cases, and then in 2020 the highest was at the Kulisusu Health Center as many as 117 cases, where DM cases in women were higher than men.

The previous research found that from 28 male respondents there were 5 respondents (17.9%) who suffer diabetes mellitus, and from 41 female respondents there were 15 respondents (36.6%) who got diabetes mellitus. However, the results of the chi square test showed a p value > 0.05, which means that there is no significant relationship between gender and diabetes mellitus [11]. The reason is that diabetes mellitus can occur to anyone whether female or male. There are several factors that cause diabetes mellitus such as genetics / heredity and unhealthy eating habits, stress and obesity and other risk factors [12].

The above research result supported the results of the 2018 Basic Health Research (Riskesdas) which found data on the number of people with diabetes mellitus with a prevalence of 1.21 in men and 1.78 in women.

In contrast to Nova Rita's research which states that female has a greater risk of suffering from Diabetes Mellitus, than men, because physically women have a greater chance of increasing body mass index (premenstrual syndrome) [13]. Post-menopausal makes the distribution of body fat easy to accumulate due to the hormonal process, so that women are at risk of suffering diabetes mellitus [14].

Similar to the research held in Makassar stated that women who suffer from diabetes was 69.8%. This is due to unhealthy food habits such as frequently consuming fatty foods and containing high glucose [15].

5. CONCLUSIONS

Based on the result of this research, it can be conclude that the number of DM cases in the North Buton Regency in 2017 was in Kulisusu Health Center with 138 cases, in 2018 the highest was at the Waode Buri Health Center as many as 46 cases, in 2019 the highest DM case number was at the Kulisusu Health Center as many as 73 cases. The latest year in 2020, the highest was at the Kulisusu Health Center as many as 117 cases and women were higher than men.

6. AUTHOR CONTRIBUTION

The authors have contributed to the preparation of this article.

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References

- [1] A. Chaudhury, C. Duvoor, V.S. Reddy Dendi, et al., "Clinical review of antidiabetic drugs: implications for type 2 diabetes mellitus management.," *Frontiers in endocrinology*. vol. 8, p. 6, 2017.
- [2] N. Narmawan, S. Syahrul, and K.A. Erika, "The behavior of foot care in patients with type 2 diabetes mellitus: Applying the theory of planned behaviour.," *Public Health of Indonesia*. vol. 4, no. 3, pp. 129–137, 2018.

- [3] Y. Mukhtar, A. Galalain, and Ujej. Yunusa, "A modern overview on diabetes mellitus: a chronic endocrine disorder.," *European Journal of Biology*. vol. 5, no. 2, pp. 1–14, 2020.
- [4] R. Irma, E. Widianingsih, and R. Rasmaniar, "RELATIONSHIP OF MORINGA LEAF CONSUMPTION HABITS AND BLOOD SUGAR LEVEL IN MUNA TRIBE IN INDONESIA.," *Public Health of Indonesia*. vol. 6, no. 3, pp. 85–93, 2020.
- [5] R.N. Fatimah, "Diabetes melitus tipe 2.," *Jurnal Majority*. vol. 4, no. 5, p. 2015.
- [6] N.I.S. Wijaya, "Hubungan Pengetahuan dengan Motivasi dalam Mencegah Terjadinya Komplikasi Diabetes Melitus di Wilayah Kerja Puskesmas Samata.," *Nursing Care and Health Technology Journal (NCHAT)*. vol. 1, no. 1, p. 2021.
- [7] A.P. Wicaksono, "Pengaruh pemberian ekstrak jahe merah (zingiber officinale) terhadap kadar glukosa darah puasa dan postprandial pada tikus diabetes.," *Jurnal Majority*. vol. 4, no. 7, pp. 97–102, 2015.
- [8] F. Megawati, N.P.D. Agustini, and N.L.P.D. Krismayanti, "Studi Retrospektif Terapi Antidiabetik Pada Penderita Diabetes Melitus Rawat Inap Di Rumah Sakit Umum Ari Canti Periode 2018.," *Jurnal Ilmiah Medicamento*. vol. 6, no. 1, pp. 28–32, 2020.
- [9] Kementerian Kesehatan RI, "Laporan Riskesdas 2018.," *Laporan Nasional Riskesdas 2018*. p. 2018.
- [10] S.K. Trisnawati and S. Setyorogo, "Faktor risiko Kejadian diabetes melitus tipe II di puskesmas kecamatan cengkareng Jakarta Barat Tahun 2012.," *Jurnal ilmiah kesehatan*. vol. 5, no. 1, pp. 6–11, 2013.
- [11] P. Rahayu, M. Utomo, and M.R. Setiawan, "Hubungan antara faktor karakteristik, hipertensi dan obesitas dengan kejadian diabetes mellitus di Rumah Sakit Umum Daerah Dr. H. Soewondo Kendal.," *Jurnal Kedokteran Muhammadiyah*. vol. 1, no. 2, p. 2012.
- [12] S. Baig, M. Shabeer, E.P. Rizi, et al., "Heredity of type 2 diabetes confers increased susceptibility to oxidative stress and inflammation.," *BMJ Open Diabetes Research and Care*. vol. 8, no. 1, p. e000945, 2020.
- [13] N. Rita, "Hubungan Faktor Genetik dan Pola Makan dengan Kejadian Diabetes Mellitus pada Lansia.," *Jurnal Kesehatan Medika Saintika*. vol. 9, no. 1, pp. 59–67, 2018.
- [14] H. Shi, R.J. Seeley, and D.J. Clegg, "Sexual differences in the control of energy homeostasis.," *Frontiers in neuroendocrinology*. vol. 30, no. 3, pp. 396–404, 2009.
- [15] J. Usman, D. Rahman, R. Rosdiana, and N. Sulaiman, "Factors Associated with the Incidence of Diabetes Mellitus to Patients in RSUD Haji Makassar.," *Jurnal Komunitas Kesehatan Masyarakat*. vol. 2, no. 1, pp. 16–22, 2020.