

Family History and Hypertension with Incidence of Diabetes Mellitus Type II

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ABSTRACT

Diabetes Mellitus is one infectious disease consequence happening. Disturbance of metabolism chronic be marked by height blood sugar levels. According to data from the 2019 International Diabetes Federation, Indonesia is included in the top 10 countries with amount sufferer supreme and is the only Southeast Asian country in that list. Study This aim is to know the connection between history discharge and hypertension with incident Diabe test mellitus type II in the Village Malintang Subdistrict Peat Banjarmasin Regency. The research design used is observational analytics with approach case-control. Sample research of as many as 48 people consists of 16 cases and 32 controls taken with a simple random sampling technique. Analysis of data using the Chi-Square test. Research Results pointing right There is a connection between history family with the incidence of Diabetes Mellitus type II with value $p=0.001$ OR=11.074, there is a connection between hypertension with the incidence of Diabetes Mellitus type II with bro value $p=0.004$, OR=7.857. Conclusion in the study: There is a connection between family history and hypertension with the incidence of Diabetes Mellitus type II.

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1. INTRODUCTION

Diabetes is a chronic disturbance marked by metabolism with blood sugar exceeding normal limits. Diabetes Mellitus is one disease with No infectious consequence happening. Disturbance metabolism chronic be characterized by height blood sugar levels. According to data from the 2019 International Diabetes Federation, Indonesia is included in the top 10 countries with amount sufferer supreme and is the only Southeast Asian country in that list. (Information Diabetes, 2020) Diabetes is a chronic disease resulting from the pancreas that does not produce enough insulin (the hormone that controls glucose blood), or the body is incapable of using the insulin it produces efficiently.

Amount cases, as well as the prevalence of Diabetes, has been increasing for some years (WHO Global Report, 2016). Most Diabetes Mellitus in Indonesia was diagnosed at 1.5%, and the diagnosed prevalence plus of sufferers with symptoms by 2.1%. The majority of Diabetes Mellitus was diagnosed in all ages. The highest was DKI Jakarta (2.6%), then DI Yogyakarta (2.4%), North Sulawesi (2.3%), East Kalimantan (2.3%), and East Java (2.0%). The prevalence of diagnosed Diabetes Mellitus plus sufferers with symptoms in a population ≥ 15 years highest found in DKI Jakarta with 3.4% (Rikesdas, 2018). increasing prevalence of Diabetes Mellitus brings change to Diabetes Mellitus's position in the top 10 list diseases (trend disease leading cause of the infection). It contributes to death due to Diabetes Mellitus (Bustan, 2015). Results data from the 2018 Basic Health Research (Rikesdas) shows the average prevalence of Diabetes Mellitus in Indonesia based on a doctor's diagnosis in a population of all ages by 1.5 % of amount population. In other words, on average, for every 100,000 Indonesian residents, 1,500 people are diagnosed with Diabetes Mellitus by doctors.

This result increase If compared to with results of Riskesdas 2013. The Province with the highest prevalence of Diabetes Mellitus is DKI Jakarta (2.6%); meanwhile, the Province with the lowest prevalence of Diabetes Mellitus is NTT (0.6%) (Rikesdas, 2018). Based on these data, many types of Diabetes Mellitus experienced Diabetes Mellitus type II. Diabetes Mellitus type II is a disturbance in metabolism that occurs with marked blood sugar levels increase, resulting in a decline in insulin secretion by pancreatic β cells and disruption in insulin function /insulin resistance (Trisnawati et al.

2013). Public health center Peat is one puskesmas in Banjarmasin Regency with enough cases of Diabetes Mellitus high. In 2016 there were 336 cases of Diabetes Mellitus; in 2017, there were 254 cases of Diabetes Mellitus, while in 2018, experienced a decline of as many as 137 points (Profile of Banjarmasin Regency / City Health Office, 2018).

Village Malintang is one Village in the District Peat in the working area public health center. Type II Diabetes Mellitus Incidence in the Village of Malintang in 2019-2020 experienced enhancement in as many as 3 cases (18.6%). Enhancement amount type II Diabetes Mellitus sufferers related to several risk factors. Factor risk is factors or conditions that affect disease or health status development. Factor risk is something disease that also affects complications to be generated. Factors that cause Diabetes Mellitus type II are distinguished into two factors: factor no risk can modify and factored possible risk-adjusted. According to the American Diabetes Association (ADA), Diabetes Mellitus is influenced by several factors. No risk can be changed that is a history of the family with Diabetes Mellitus, age, race/ethnicity, history of giving birth to a birth weight baby >4000 grams, or history Once Suffering from gestational diabetes mellitus and history born LBW. Factor possible risk modified namely, obesity based on BMI or circumference stomach, physical activity weakness, hypertension, dyslipidemia, and no healthy diet. Other related factors with diabetes risk are sufferers of Polycystic Ovary Syndrome (PCOS), sufferers of metabolic syndrome have a history of Tolerance Glucose Interrupted (TGT) or Fasting Blood Glucose Previously disturbed (GDPT), history disease cardiovascular such as stroke, CHD, or PAD (Peripheral Arterial Diseases), consume alcohol, stress, smoking, type gender, consumption of coffee and caffeine (ADA, 2013).

2. METHODS

The research design used is analytic observational with an approach case-control. The research was done in the month December 2020. Population study is Population study This that is all patient midwives in 2019-2020 in the village Malintang, district Gambut, Banjarmasin Regency, as many as 295 people. The sample consisted of 48 patients of 16 cases and 32 controls taken with a simple random sampling technique. The measured variable in the study is the history of the diabetes mellitus family, hypertension, and the incidence of type II diabetes mellitus. Data collected used a questionnaire and analyzed univariately using table frequency and analysis bivariate using the Chi-Square Test.

3. RESULTS AND DISCUSSION

Based on table 1 shows that of 16 respondents' cases, as many as 13 people (59.1%) had a history of family suffering from Diabetes Mellitus in their families, and three people (11.5%) did not own a history of family suffering from Diabetes Mellitus in their family. Whereas of the 32 respondents' control, as many as nine people (40.9%) have a history of family suffering from Diabetes Mellitus, their families, and 23 people (88.5%) do not own a history of family suffering from Diabetes Mellitus, his family. Family history seen from There is or nope family respondents who suffer from DM Type II are good from history family mother, father, grandfather, grandmother or member family other. Table 1 shows that of 16 respondents' cases, as many as 11 people (61.1%) experienced hypertension, and five people (16.7%) did not experience hypertension. Whereas of 32 respondents' control, as many as seven people (38.9%) experienced hypertension, and 25 people (83.3%) did not experience hypertension. From the data in Table 1 of 16 respondents with Diabetes Mellitus Type II obtained, 11 respondents had hypertension, and five had No hypertension. According to the assumption researcher, p the happen exists other factors exist 70 because Diabetes Mellitus Type II does not only caused by hypertension just. Of the five respondents who did not have hypertension, the typical own habit pattern is eating what you don't. Healthy, consumption food contains excess sugar, fat, and often consumed carbohydrate excess like rice added with noodles the second instant is carbohydrates.

Table 1. Respondents' Cases Incident Diabetes Type 2

Variable	Incident Diabetes type 2				P Value	OR	95% CI
	Case		Control				
	Frequency	Percentage	Frequency	Percentage			
Family history							

with DMs						
There is	13	59,1	9	40,9	0.001	2.5-
None _	3	11.5	23	88.5		48.3
						11,074
Hypertension						
Yes	11	61,1	7	38,9	0.004	2.0-
No	5	16,7	25	83.3		30.2

An unhealthy diet healthy and consumption of carbohydrate excess will make blood sugar levels in the body go up fast, Then will increase the risk of Type II Diabetes Mellitus (Soedarsono, 2016). Table 2 shows a group case of 16 respondents, as many as 13 people (59.1%) have a history of family suffering from Diabetes Mellitus, their families, and three people (11.5%) did not own a history family suffering from Diabetes Mellitus, his family. Meanwhile, in the group control of 32 respondents, as many as nine people (40.9%) have a history of family suffering from Diabetes Mellitus, their families, and 23 people (88.5%) do not own a history of family suffering from Diabetes Mellitus family. Statistical test results with the Chi-Square test have obtained the value of $p=0.001$ means. There is a significant connection between the history of the family and the incidence of Diabetes mellitus in the community in the Village.

From the results, the analysis also obtained a value $OR=11,074$ (95% CI 2,538 – 48,310) means that somebody with an own history of family suffering from Diabetes Mellitus his family has a risk of 11,074 times more big For suffer from Type II Diabetes Mellitus compared with those that don't own history family suffering from Diabetes Mellitus, his family. Based on Table 1, which has held history family seen from There is or nope family respondents who suffer from DM Type II are good from history family mother, father, grandfather, grandmother or member family other. Family history is one factor that is not can avoid.

If one from parents suffering from Type II Diabetes Mellitus, the risk child for suffer from Type II Diabetes Mellitus is bigger compared to with child who doesn't own a history of Type II Diabetes Mellitus family. Risk This will increase if his parents suffer from Type II Diabetes Mellitus. This is strengthened by a theory that states if one of the parents suffers from Type II Diabetes Mellitus, the child will risk 40% of suffering from Type II Diabetes Mellitus, and if his parents suffer from Type II Diabetes Mellitus, then will 70% increase to a child suffering from Type II Diabetes Mellitus. Diabetes can happen Because complex interactions between genetic predisposition and behavior make someone less healthy, strengthening the emergence of diabetes mellitus. This is proven by several previous studies demonstrating that that person has a history of family suffering from Diabetes Mellitus dominant, lowered, or inherited (Maulana, 2009). Risk For suffering from DM from Mother more 10-30% greater than fathers with Diabetes Mellitus. This is because of gene inheritance in content bigger from the mother over time. If a brother physically suffers from Diabetes Mellitus, then the risk Of suffering from Diabetes Mellitus is 10%, and 90% of those who suffer are twin identical (Diabetes UK, 2010). Based on table 2 shows that of 16 respondents' cases, as many as 11 people (61.1%) experienced hypertension, and five people (16.7%) did not experience hypertension. Whereas of the 32 respondents control, as many as seven people (38.9%) experienced hypertension, and 25 people (83.3%) did not experience hypertension. Analysis results in bivariate statistical test Chi-square, that p -value = 0.004. The p -value is smaller than 0.05 (0.004).

4. CONCLUSION

There is a connection between family history and hypertension with the incidence of Diabetes Mellitus type II.

REFERENCES

- [1] Afida, A. M., Negara, C. K., & Chrismilasari, L. A. (2022). Burger Allen Exercise Against The Circulation Of The Lower Extremities In Diabetic Ulcer Patients. *Jurnal EduHealth*, 13(01), 241-249.
- [2] Al Mahdi, F., Negara, C. K., & Basid, A. (2020). The Effect of Family Empowerment in Nursing *Family History and Hypertension with Incidence of Diabetes Mellitus Type II*. **Dewi Nurhanifah, et.al**

- Implementation Toward Self-Efficacy among Patients with Diabetes Mellitus. *INDONESIAN NURSING JOURNAL OF EDUCATION AND CLINIC (INJEC)*, 5(2), 141-146.
- [3] Ardila, N., Maharani, R., Sabella, A., & Negara, C. K. (2022). The Effect of Wound Treatment Using Honey on Colonization of Staphylococcus Aureus Bacteria in Diabetic Wounds in Patients with Diabetes Mellitus in the Work Area Banjarmasin Health Center.
- [4] Asmarani, Tahir, A. C. and Adryani, A. 2017. Analisis Faktor Risiko Obesitas dan Hipertensi dengan Kejadian Diabetes Melitus Tipe 2 di Rumah Sakit Umum Daerah Kota Kendari. (online) 4(2), pp. 322–331
- [5] American Diabetes Association. 2015. Diagnosis and Classification of Diabetes Mellitus. Diabetes Care Soedarsono. 2016. Cara Alami Mencegah dan Mengobati Diabetes. Surabaya: Stomata.
- [6] Anggara, N., & Negara, C. K. (2022). HEALTH EDUCATION HYPERTENSION PREVENTION. *JOURNAL of EDUCATIONS*, 1(1).
- [7] Basid, A., & Negara, C. K. (2023). IMPROVING SELF-EFFICACY DIET COMPLIANCE IN DIABETES MELLITUS PATIENTS THROUGH HEALTH EDUCATION. *JURNAL PENGABDIAN MASYARAKAT*, 2(1).
- [8] Badan Penelitian dan Pengembangan Kementerian Kesehatan RI Bustan. 2015. Manajemen Pengenalan Penyakit Tidak Menular. Jakarta : Rineka Cipta Brunner and Suddarth. (2013).
- [9] Buku Ajar Keperawatan Medikal Bedah. Edisi 8 Volume 1 Jakarta: EGC Balqis Sarah Mahfudzoh.
- [10] Negara, C. K. (2017). Post Amputation Response And Coping Of Diabetes Mellitus Patient In Ulin General Hospital Banjarmasin. *Journal of Nursing Science Update (JNSU)*, 5(2), 114-129.
- [11] Negara, C. K. (2020). Hubungan Kadar Kolesterol Darah Dan Hipertensi Dengan Kejadian Stroke Di Rsud Ulin Banjarmasin Tahun 2020. *Jurnal Medika: Karya Ilmiah Kesehatan*, 5(2).
- [12] Khan S., Cooper M., Del-Prato S. 2014. Pathophysiology and treatment of type 2 diabetes: a perspective on the past, present, and future, *Lancet*, Vol. 303, no. 9922, pp. 1068-1083
- [13] Maulana. 2009. Mengenal Diabetes. Jogjakarta: Ar-Ruzz Media Grup ISBN: 979- 25- 4488
- [14] Negara, C. K., & Basid, A. (2022). COMMUNITY SERVICE HEALTH EDUCATION ABOUT THE BENEFITS OF DIABETES EXERCISE IN THE ELDERLY IN SUNGAI TABUK KERAMAT VILLAGE. *JURNAL PENGABDIAN MASYARAKAT*, 1(1).
- [15] Negara, C. K., Basid, A., Erliani, S., & Turahman, I. (2019). The Relationship Between Discharge Planning and The Quality of Life of Patients with Diabetic Ulcer. *Indonesian Nursing Journal Of Education And Clinic (INJEC)*, 4(1), 20-24.
- [16] Negara, C. K., & Pandin, M. G. R. (2022). The Habits of the Indonesian People by Drinking Coffee with the Incidence of Hypertension.
- [17] Moch Yunus, S. P. R. (2019). Hubungan Antara Faktor Risiko Diabetes Melitus yang Dapat Diubah Dengan Kejadian DM Tipe 2 di Puskesmas Janti Kota Malang. *Journal Sport Science and Health*, 1(1), 59–71.
- [18] Saputra, M., Negara, C. K., Afida, A. M., Puspasari, H., & Murjani, A. (2019). Correlation of Blood Cholesterol Levels and Hypertension with The Incidence of Stroke in The Provincial Hospital of Banjarmasin. *Indonesian Nursing Journal of Education and Clinic (Injec)*, 4(1), 55-60.
- [19] Trisnawati, Shara K. 2013. Faktor Risiko Kejadian Diabetes Mellitus Tipe 2 di Puskesmas Kecamatan Cengkareng Jakarta Barat Tahun 2012. *Jurnal Ilmiah Kesehatan*, 5(1); Januari 2013.
- [20] Wicaksono, R. 2011. Faktor-Faktor yang Berhubungan dengan Kejadian Diabetes Mellitus Tipe II. Eprints - Universitas Diponegoro, Banjarmasin
- [21] World Health Organization. 2016. Global Report on Diabetes. ISBN 978 92 4 1565257. World Health Organization : Geneva Kementerian Kesehatan.2020. Infodatin “ Tetap Produktif,Cegah,dan Atas Diabetes Melitus”. ISBN 2442-7659. Pusat Data dan Informasi : Jakarta. Badan Penelitian dan Pengembangan