

The Eating Habbits of Type 2 Diabetes Mellitus in Primary Healthcare Center

Ratna Wirawati Rosyida^{1*}, Ni Kadek Diah Purnamayanti², Marina Kristi Layun Rining³

¹Departement of Nursing, Faculty of Health Science, Universitas Alma Ata,
Jalan Brawijaya No. 99 Yogyakarta 55183, Indonesia

²STIKES Buleleng, Bali, Indonesia

³STIKES Wiyata Husada, Samarinda, Indonesia

*Corresponding author: ratna.rosyida@almaata.ac.id

ABSTRAK

Latar belakang: Diabetes Mellitus (DM) tipe 2 yang termasuk dalam penyakit tidak menular memiliki prevalensi yang terus meningkat setiap tahun. Yogyakarta menjadi provinsi dengan prevalensi DM tipe 2 terbanyak di Indonesia. Diet pada pasien diabetes merupakan salah satu pilar manajemen diri diabetes yang penting untuk dipatuhi. Diet pada pasien diabetes akan berpengaruh terhadap kadar glukosa darah atau kondisi glikemik yang optimal.

Tujuan: untuk mengetahui gambaran pola makan pada pasien DM tipe 2 di Yogyakarta

Metode: metode cross sectional study dilakukan kepada 80 responden. Instrumen yang digunakan berupa kuesioner demografi dan pertanyaan terbuka mengenai pola makan yang dilakukan.

Hasil: usia rata-rata responden 56 tahun, lama menderita DM rata-rata hampir 6 tahun, sebagian besar responden (72,5%) mengatur pola makan sehari-hari dengan cara membatasi konsumsi makan/minum manis (32,39%), mengurangi karbohidrat (25,35%), dan mengurangi porsi makan (16,90%).

Kesimpulan: sebagian besar pasien DM tipe 2 di Yogyakarta telah mengatur pola makan. Pola makan yang banyak diterapkan pasien DM tipe 2 di Yogyakarta adalah membatasi konsumsi makan/minum yang manis.

KATA KUNCI: diabetes melitus; pola makan; Indonesia

ABSTRACT

Background: Type 2 Diabetes Mellitus (DM) which is included in non-communicable diseases has an increasing prevalence every year. Yogyakarta is the province with the highest prevalence of type 2 diabetes in Indonesia. Diet in diabetic patients is one of the important pillars of diabetes self-management to be obeyed. Diet in diabetic patients will affect blood glucose levels or optimal glycemc conditions.

Objectives: to know the description of dietary pattern in patients with type 2 DM in Yogyakarta

Methods: a cross-sectional study method was carried out on 80 respondents. The instrument used was in the form of a demographic questionnaire and open-ended questions about eating patterns.

Results: the average age of the respondent was 56 years, the duration of DM suffered an average of almost 6 years, the majority of respondents (72.5%) regulate daily eating patterns by limiting consumption of food/beverages sweet (32.39%), reduce carbohydrates (25.35%), and reduce food portions (16.90%).

Conclusion: the majority of type 2 DM patients in Yogyakarta have adjusted their diet. The diet that is widely applied by patients with type 2 diabetes in Yogyakarta is to limit the consumption of sweet foods/drinks.

KEYWORDS: diabetes mellitus; dietary; Indonesia

INTRODUCTION

Type 2 diabetes mellitus (DM) is a non-communicable disease group with the fourth highest prevalence in the world (1). Type 2 diabetes mellitus

occurs because of insulin resistance or because of pancreatic decompensation to produce insulin. This causes increased glucose levels in the blood or called hyperglycemi (2). The prevalence of type 2

diabetes is 350 million and is predicted to increase to 700 million by 2045 (3). In Indonesia, the proportion of DM is 6.9% and the highest prevalence of diabetes diagnosed by doctors in Indonesia is in the Yogyakarta Special Region (DIY), which is 2.6% (4).

Diabetes management recommended by the International Diabetes Federation (5) is implementing a healthy diet, increasing physical activity, and controlling weight. Meanwhile, according to PERKENI (6), diabetes management consists of education, nutritional therapy, physical exercise, pharmacological therapy, and blood glucose monitoring. Diet becomes one of the pillars of diabetes self-management that is important to note. The key to the success of a diet or nutritional level is the comprehensive involvement of health workers. The principle of diet for diabetic patients is almost the same as the general public namely a balanced diet and according to individual calorie and nutrient requirements (7). Diet is an important diabetes self-management factor because a good diet can help diabetic patients achieve good glycemic levels or controlled blood glucose (7,8). The quality of the diet, especially in terms of limiting consumption of sugar, processed and non-processed meat, increasing consumption of fresh vegetables and fruit is associated with the risk of type 2 diabetes (9). Based on the results of published literature studies, in Yogyakarta, there are no recent data regarding the description of eating patterns in type 2 DM patients. Therefore, this study aims to determine the pattern of eating patterns in type 2 DM patients in Yogyakarta.

MATERIALS AND METHODS

Methods

This research was conducted with cross-sectional study design. The study was conducted in 4 Primary Health Center in the working area of the Yogyakarta City in February-April 2019. Variable in this study was about eating habit of type 2 DM patients. The description of the eating habit of respondents was obtained using an open-ended questions about how the eating habits were carried out by respondents with DM type 2. A demographic questionnaire was also used to obtain characteristic data Type 2 DM respondents in Yogyakarta.

Demographic questionnaire contained information about age, occupation, time of suffered with type 2 DM, education, and income.

Sample

The sample in this study was obtained by purposive sampling technique by the inclusion criteria. Inclusion criteria included respondents aged > 18 years, diagnosed with type 2 diabetes by a doctor, registered as a patient at the study site, able to speak Indonesian both oral and written. Exclusion criteria were patients who refused to become respondents and filled out questionnaires incompletely. We got 85 respondents, 5 respondents excluded because they refused to be a respondent. Samples were obtained by 80 respondents. Data analysis was performed univariately using SPSS version 20 software.

RESULTS

Total 80 respondents received the demographic questionnaire and the open-ended question questionnaire about the dietary pattern taken. All respondents filled out the questionnaire completely. From **Table 1** it can be seen that the average age of the respondent is 56 years with an average length

Table 1. Characteristics of Respondents in Type 2 DM Patients in Yogyakarta

Characteristics Respondent	Mean	SD
Age	56.63	7.94
Long suffered from DM	5.98	5.89
	n = 80	%
Education:		
Elementary School	9	11.3
Junior High School	15	18.8
Senior High School	27	33.8
3-year diploma	4	5
Bachelor	20	25
Magister	5	6.3
Occupation		
Work	42	52.5
Does Not Work	38	47.5
Income		
<Regional Minimum Wage	39	48.8
>Regional Minimum Wage	41	51.3

of diabetes of 6 years. The education level of the respondents is mostly high school (33.8%), most of them are still workers (47.5%) with income mostly above the minimum wage (51.3%).

In **Table 2** it can be seen that the majority (72.5%) of type 2 DM patients in Yogyakarta regulate their eating patterns.

Table 2. Habits of Managing Diets in Type 2 DM Patients in Yogyakarta

Habits to Manage Eating	Yes		No		Occasionally	
	n	%	n	%	n	%
Eating	58	72.5	19	23.75	3	3.75

The eating habits that can be done can be seen in **Table 3**. In that table it can be seen that the eating habits that are often carried out by type 2 DM patients in Yogyakarta are limiting consumption of sweet foods / drinks, reducing carbohydrates / rice, and reducing food portions.

Table 3. How to Manage the Diet of DM Type 2 Patients in Yogyakarta

How to Manage Eating Habbit	n	%
Increase consumption of vegetables and or fruit	11	15.49
Reducing carbohydrates / rice	18	25.35
Limit consumption of drinks / sweet foods	23	32.39
Consuming brown rice	3	4.23
Monday-Thursday fasting	1	1.41
Reducing the size of the meal	12	16.90
No dinner	3	4.23
Total	71	100

DISCUSSION

Diet is an important factor in type 2 DM patients as an effort to control blood glucose levels to remain stable or achieve good glycemic index levels. According to research conducted by Jordi et al. (10) states that diet is important for type 2 DM patients. Eating patterns that tend to emphasize plant consumption have a good effect on glycemic control in diabetic patients. Sarmiento et al. (11) patients underwent clinical, laboratory, and nutritional evaluations. Dietary intake was assessed by a quantitative food frequency questionnaire and eating patterns identified by cluster analysis. The

therapeutic targets were as follows: blood pressure, < 140/ 90mmHg; BMI, < 25 kg/m2 (< 27 kg/m2 for elderly states that a healthy diet consists of consumption of whole carbohydrates, consumption of white meat, fruits, and vegetables. A healthy diet adopted by diabetic patients will be beneficial for reducing fasting blood glucose levels, HbA1c levels, and LDL cholesterol levels in type 2 DM patients. In addition, Campbell (12) states that the diets of DM patients can follow the diets of hypertensive patients, namely the DASH (Dietary Approaches to Stop Hypertension) diet. The recommended diet is to consume a variety of foods including whole grains, fat-free or low-fat dairy products, fruits, vegetables, poultry, fish, and nuts. Besides being beneficial in controlling blood pressure, the DASH diet will be beneficial for improving insulin resistance, hyperlipidemia, and obesity in diabetic patients. This study provides important information about eating patterns in type 2 DM patients in Yogyakarta. Eating patterns mostly tend to reduce the consumption of sweet foods / drinks, reduce carbohydrates / rice, and reduce daily food portions.

CONCLUSION AND RECOMMENDATION

Most type 2 DM patients in Yogyakarta manage their daily diet. Eating patterns include reducing consumption of sweet foods / drinks, reducing carbohydrates / rice, and reducing daily food portions. Health workers have an important role in providing education about eating patterns to diabetic patients by paying attention to eating schedules, the amount of food, and the type of food consumed. A good diet will affect blood glucose levels and glycemic conditions in type 2 DM patients.

REFERENCES

1. World Health Organization. Noncommunicable diseases [Internet]. 2018. Available from: <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>
2. International Diabetes Federation. About Diabetes: Type 2 diabetes [Internet]. 2019. Available from: <https://www.idf.org/aboutdiabetes/type-2-diabetes.html>

3. International Diabetes Federation. New IDF figures show continued increase in diabetes across the globe, reiterating the need for urgent action [Internet]. 2017. Available from: <https://www.idf.org/news/94:new-idf-figures-show-continued-increase-in-diabetes-across-the-globe,-reiterating-the-need-for-urgent-action.html>
4. Badan Penelitian dan Pengembangan Kesehatan KEMENKES RI Tahun 2013. Basic Health Research (RISKESDAS) 2013. Jakarta; 2013.
5. International Diabetes Federation. What is diabetes [Internet]. 2018. Available from: <https://www.idf.org/aboutdiabetes/what-is-diabetes.html>
6. Soelistijo S, Novida H, Rudijanto A, Soewondo P, Suastika K, Manaf A, et al. Konsensus Pengelolaan Dan Pencegahan Diabetes Melitus Tipe2 Di Indonesia 2015 [Internet]. Perkeni. 2015. 82 p. Available from: <https://www.google.com/url?sa=t&source=web&ct=j&url=https://pbperkeni.or.id/wp-content/uploads/2019/01/4.-Konsensus-Pengelolaan-dan-Pencegahan-Diabetes-melitus-tipe-2-di-Indonesia-PERKENI-2015.pdf&ved=2ahUKEwjy8KOs8cfoAhXCb30KHQb1Ck0QFjADegQlBhAB&usg=AOv>
7. Susanti S, Bistara DN. Hubungan Pola Makan Dengan Kadar Gula Darah Pada Penderita Diabetes Mellitus. *J Kesehat Vokasional* [Internet]. 2018 May 25 [cited 2020 Nov 2];3(1):29. Available from: <http://journal.ugm.ac.id/jkesvo>
8. Mardhiyah Idris A, Jafar N, Indriasari R. Pola Makan dengan Kadar Gula Darah Pasien DM Tipe 2 (Diet and Blood Sugar Levels of Type 2 DM Patient). 2014.
9. Ley SH, Hamdy O, Mohan V, Hu FB. Prevention and management of type 2 diabetes: Dietary components and nutritional strategies [Internet]. Vol. 383, *The Lancet*. Lancet Publishing Group; 2014. p. 1999–2007. Available from: <https://pubmed.ncbi.nlm.nih.gov/24910231/>
10. Salas-Salvadó J, Becerra-Tomás N, Papandreou C, Bulló M. Dietary Patterns Emphasizing the Consumption of Plant Foods in the Management of Type 2 Diabetes: A Narrative Review [Internet]. Vol. 10, *Advances in Nutrition*. Oxford University Press; 2019. p. S320–31. Available from: <https://pubmed.ncbi.nlm.nih.gov/31728494/>
11. Sarmiento RA, Antonio JP, Miranda IL de, Nicoletto BB, de Almeida JC. Eating patterns and health outcomes in patients with type 2 diabetes. *J Endocr Soc*. 2018;2(1):42–52.
12. Campbell AP. DASH eating plan: An eating pattern for diabetes management. *Diabetes Spectr*. 2017 Mar 1;30(2):76–81.