

# **Knowledge Level with Self-Management and Compliance with Diabetes Mellitus Drug Use in Gading Clinic, Yogyakarta**

## **(Hubungan Tingkat Pengetahuan Dengan Manajemen Diri dan Kepatuhan Penggunaan Obat Pasien Dabetes Mellitus di Klinik Gading Yogyakarta)**

YOGA DWI SAPUTRA<sup>1\*</sup>, NUR AINI WIDIASTUTI<sup>1</sup>

<sup>1</sup>Program Studi Diploma III Farmasi, Akademi Farmasi Indonesia Yogyakarta, Yogyakarta, D.I. Yogyakarta, Indonesia. 57552

Submitted 1 Maret 2022, Accepted 10 Agustus 2022

**Abstract:** Diabetes mellitus is a global disease. This study aimed to determine the relationship between the level of knowledge and accuracy of diabetes mellitus drug use and the relationship between the level of knowledge and adherence to diabetes mellitus drug use at the Gading Clinic Yogyakarta. This study was observational. Participants were typed 2 diabetes mellitus patients in the JKN referral program at the Gading Yogyakarta Clinic. Data were collected through questionnaires on knowledge related to diabetes mellitus, accuracy, and adherence. Data analysis was performed using the SPSS program with the chi-square test. The results showed a correlation between knowledge and self-management ( $p = 0.007$ ), while no correlation was found between knowledge and medication adherence ( $p = 0.734$ ). Based on these results, there was a correlation between diabetes mellitus knowledge and self-management in patients with type 2 diabetes mellitus at the Gading Clinic in Yogyakarta.

**Keywords:** adherence, diabetes mellitus, knowledge, self-management

**Abstrak:** Diabetes Mellitus adalah salah satu penyakit yang menjadi permasalahan di dunia. Penelitian ini ditujukan untuk mengetahui hubungan tingkat pengetahuan dan ketepatan penggunaan obat diabetes mellitus dan untuk mengetahui hubungan tingkat pengetahuan dan kepatuhan penggunaan obat diabetes mellitus di Klinik Gading Yogyakarta. Penelitian dilakukan dengan observasional yang bersifat correlation study. Responden pada penelitian ini adalah pasien rujuk balik penderita diabetes mellitus tipe 2 di Klinik Gading Yogyakarta. Data dikumpulkan melalui kuesioner tentang pengetahuan terkait penyakit diabetes mellitus, ketepatan dan kepatuhan penggunaan obat. Analisa data dilakukan dengan Uji Chi Square. Hasil menunjukkan bahwa ada hubungan antara pengetahuan dan manajemen diri ( $p$  value = 0,007) dan tidak ada hubungan antara tingkat pengetahuan dan kepatuhan penggunaan obat ( $p$  value = 0,734). Berdasarkan hasil tersebut maka dapat disimpulkan bahwa pengetahuan tentang diabetes mellitus memiliki hubungan terhadap manajemen diri pasien diabetes melitus tipe 2 di Klinik Gading Yogyakarta.

**Kata kunci:** diabetes mellitus, pengetahuan, manajemen diri, kepatuhan penggunaan obat.

---

\*Corresponding author  
e-mail: yogadwisaputra@afi.ac.id

## INTRODUCTION

DIABETES mellitus is a disease that cannot be cured permanently so many patients are bored and do not comply with treatment, and it causes uncontrolled blood sugar levels<sup>(1)</sup>. The success of therapy to improve the quality of life of patients with diabetes mellitus is influenced by several factors, one of which is pharmacological intervention if the plasma glucose target has not reached the target by regulating diet and physical exercise<sup>(2)</sup>.

Based on the Indonesian Basic Health Research (Risikesdas) in 2018, the prevalence of diabetes mellitus in D.I. Yogyakarta ranks second in Indonesia based on doctors' noses for residents of all ages<sup>(3)</sup>. The level of knowledge is very necessary for the management of diabetes mellitus, but the individual's ability to manage daily life, control and reduce the impact of the disease he suffers is known as self-management or Self Management is needed in controlling DM<sup>(4)</sup>. DM self-management can be interpreted as a set of programs carried out by individuals to manage their diseases such as taking medication, controlling blood sugar, physical exercise, and diet regulation<sup>(5)</sup>. A DM patient needs to understand the management of the disease he is suffering from. DM patients make efforts to manage DM disease with self-management tasks that aim to control blood sugar.

Research conducted by Kusnanto (2019)<sup>(6)</sup> stated that diabetes self-management had a stronger relationship with the stress level of undergoing a DM patient's diet than the relationship between the level of knowledge and the stress level of undergoing a DM patient's diet. Adherence is the degree to which the patient follows the clinical recommendations of the treating physician<sup>(7)</sup>. According to Sackett in Niven (2000)<sup>(8)</sup>, compliance is the extent to which the patient's behavior is by the provisions given by health professionals (Lawrence Green's Preced-Proceed Behavior Theory). This is because type 2 diabetes mellitus is a chronic disease with various disease management, which requires individuals who experience it to be able to carry out good management to achieve blood sugar levels at an average level (euglycemia)<sup>(9)</sup>. Research conducted by Yuwindry (2016)<sup>(10)</sup> states that the level of knowledge of patients with type 2 diabetes mellitus has a significant effect on their quality of life by 31.6%. The level of knowledge of patients with type 2 diabetes mellitus has a significant effect on drug use compliance by 25.1%. Compliance with drug use in patients with type 2 diabetes mellitus has a significant effect on the quality of life by 75.2%. Adherence to drug use as an intermediate variable increases the effect of the

knowledge level of type 2 DM patients on the quality of life from 24% to 29%.

As one of the flagship programs of BPJS (Social Security Administering Body) in the field of Health, namely facilitating access to health services for participants with chronic diseases, optimization of the implementation of the Referback Program is carried out. Referral program services are provided to BPJS Health participants with chronic diseases, especially diabetes mellitus. Gading Clinic is a clinic that collaborates with BPJS Health as a level I health facility that has a Referral Back Program service for diabetes mellitus patients. The purpose of this research was to determine the relationship between the level of knowledge and the accuracy of diabetes mellitus drug use and to determine the relationship between the level of knowledge and adherence to diabetes mellitus drug use at Gading Clinic Yogyakarta.

## MATERIALS AND METHODS

**RESEARCH DESIGN.** This research uses the observational method. The design used in this study is a correlation study with a descriptive approach. Data from the research will be analyzed descriptively (real picture) which is used to determine the percentage which is then linked to other variables. This research was carried out at the Gading Clinic, Yogyakarta, which is located at Jalan D.I. Panjaitan No.25, Mantrijeron, Kec. Mantrijeron, Yogyakarta City in January 2020.

**Research Subject.** The population of this study was all patients who were referred back with type 2 diabetes mellitus at the Gading Clinic, Yogyakarta, totaling 209 patients. The samples taken were referred patients with Type 2 DM who were registered at the Gading Clinic Yogyakarta in September-November 2019. This study used a random sampling technique, with calculations using the slovin formula. The results of the calculation of the sample taken based on the slovin formula are 68 respondents.

**Research Instruments.** There are 3 instruments used in this study, namely a questionnaire related to knowledge about diabetes mellitus taken from the Diabetes Knowledge Questionnaire (DKQ 24) which contains 24 questions<sup>(11)</sup>, the questionnaire consists of 11 favorable questions and 13 unfavorable questions. Favorable questions are worth 1 if given the answer "Yes" and 0 if given the answer "No", while for unfavorable questions, it is worth 0 if given the answer "Yes" and given a value of 0 for the answer "No".

The measurement of DM self-management was carried out by filling out a questionnaire containing 14 questions. The questionnaire used is a self-

management questionnaire by Summary Diabetes Self Care Activity (SDSCA) which was developed by Toobert, Hampson & Glasgow (2000) and has been translated and modified by Kusniawati (2011)<sup>(12)</sup>. The results of the instrument validity test obtained the value of  $r$  in the range of 0.200-0.743. While the results of the reliability test are Cronbach's  $r$  alpha: 0.812 ( $r$  alpha > 0.361). There are 8 answer choices according to the type of question regarding how intensively the patient has done self-management of DM during the last 7 days. The favorite questions are 12 items, namely numbers 1-4 and 7-14. Questionnaire about adherence to diabetes mellitus use containing 8 questions taken from the Morinsky Medication Adherence Scale (MMAS) which has been translated and validated by Nur Rasdianah (2016)<sup>(13)</sup> with the results of the validity and reliability test of the MMAS-8 questionnaire  $r$  (Cronbach's alpha) of 0.6565 and 0.7956.

**Data Analysis.** The data analysis used by the researcher is an analysis of the respondent's characteristics data which aims to see the demographic characteristics of the respondents, including age, gender, education, occupation, and length of suffering from DM. Analysis of the level of knowledge about diabetes mellitus and analysis of the level of patient compliance related to drug use was carried out with a score of 1 for correct answers and 0 for wrong answers. This questionnaire is closed in nature where respondents are only allowed to choose the answer "Yes" or "No". Respondent data taken through the questionnaire calculated the total value so that the respondent's score was obtained by calculating using the formula:

$$\text{Percentage} = \frac{(\text{Number of correct scores})}{(\text{Number of Questions})}$$

The data that has been obtained is analyzed using Microsoft Excel, the data will later be entered according to the answers from the questionnaires that have been filled out by the respondents. The level of knowledge is said to be good if the value obtained is above 75%, sufficient if the value ranges from 60-75%, and is said to be lacking if the value is below 60%<sup>(14)</sup>. Measuring DM self-management, there are 8 answer choices according to the type of question regarding how intensively the patient has done DM self-management for the last 7 days. The favorite questions are 12 items, namely numbers 1-4 and 7-14. The value given to the favorite question is a value of 0 that has never been done; value 1 do 1 day; value 2 do 2 days; value 3 do 3 days; value 4 do 4 days; value 5 do 5 days; value 6 do 6 days; value 7 do 7 days. Questions

number 5 and 6 are unfavorable questions, the score given is the opposite of the favorable questions, which is given a score of 7 if you have never done it; value 6 do 1 day; value 5 do 2 days; value 4 do 3 days; value 3 do 4 days; value 2 do 5 days; value 1 do 6 days; value 0 does 7 days. The lowest score for each question is 0 and the highest is 7. The respondent's score is obtained by adding up all the scores then dividing by 14.

Determination of the ordinal scale on self-management based on the calculation of the mean (mean) and standard deviation calculated using SPSS. The measurement results obtained are: If the value obtained is Mean  $\pm$  SD = high level of self-management. High self-management level = If the value obtained is < Mean  $\pm$  SD = the level of self-management is low. Low self-management level = 0. While the analysis of drug use compliance is categorized into three categories, namely obedient, moderate and non-adherent. Compliance data was obtained by providing the following assessment categories<sup>(15)</sup>: If the value is equal to 8 then it is categorized as obedient, If the value is 6-8 then it is categorized as moderate. If the value is < 6 then it is categorized as non-compliant.

The normality test of the data was carried out with the Kolmogorov Smirnov test. The Kolmogorov Smirnov test is a test of the difference between the data being tested for normality and standard normal data. The basis for collecting the Kolmogorov Smirnov test data are: If the significance value (Sig.) > 0.05 then the data is normally distributed. If the significance value (Sig.) < 0.05, then the data is not normally distributed.

The Chi-Square test was used to obtain the relationship between the level of knowledge and self-management of DM. Chi-Square tests decision-making by looking at the value of the output table from the SPSS results. Decision-making is based on the Chi-Square test value, namely: If the value of  $r$  count >  $r$  table, it means that  $H_0$  is rejected and  $H_a$  is accepted. If the value of  $r$  count <  $r$  table, it means that  $H_0$  is accepted and  $H_a$  is rejected. If  $H_0$  is rejected, then there is a relationship between two different variables, so it can be stated that there is a relationship between the patient's level of knowledge and DM self-management at the Gading Clinic, Yogyakarta. If  $H_a$  is accepted, then there is no relationship between the level of knowledge and self-management of DM at Klinik Gading Yogyakarta. Analysis of the relationship between the level of knowledge about diabetes mellitus and adherence to medication use if a  $p$ -value < 0.05 is obtained, then  $H_0$  is rejected and  $H_a$  is accepted, meaning that there is a significant relationship between the two variables<sup>(16)</sup>.

## RESULTS AND DISCUSSION

**Knowledge Level.** Patient knowledge about DM is an important means to help treat the disease itself, so the more knowledge the patient has, the better the treatment for the disease itself. The following is the respondent's level of knowledge regarding the patient's knowledge about the DM he suffers.

These results indicate that the majority of respondents who are Type 2 DM patients at the Gading Clinic Yogyakarta have good knowledge about the disease they are suffering from. They do not know that DM is a disease that requires serious treatment. The high level of knowledge about DM that is owned by the respondents indicates the existence of self-awareness to improve the quality of health for patients with Type 2 DM.

The high level of knowledge of diabetes mellitus patients proves the success of a healthy living program for Type 2 DM patients held by Klinik Gading Yogyakarta. One of the factors supporting a good level of knowledge is the existence of prolanis held at Klinik Gading on Tuesdays and Saturdays in the 3rd week of each month. This program was filled with various activities including measuring blood sugar, blood pressure, weight, and abdominal circumference, then joint gymnastics activities were carried out in the clinic yard, after which there were given counseling by resource persons on different topics at each meeting. This program is implemented to improve the quality of health and knowledge for Prolanis patients, the collaboration between Ivory Clinic Yogyakarta and Prolanis patients, especially those with Type 2 DM, needs to be maintained and fostered. The results of patient knowledge level about diabetes mellitus can be seen in Table 1.

**Table 1. Patient knowledge level about diabetes mellitus.**

N	Knowledge level	Frequency	Percentage
1	Good	55	80.88%
2	Enough	11	16.18%
3	Deficient	2	2.94%

**Self Management.** Patient self-management is determined on a high and low scale. Self-management is high if the respondent's value is more than equal to the total range of the mean and standard deviation values by subtracting the mean and standard deviation values, self-management is low if the respondent's value is less than that range. The mean and standard deviation values are obtained by entering the formula in Ms. Excel 2010. A high level of self-management is given a value of 1 and a low level of self-management is given a value of 0. Self-management is a self-care

intervention that is often used independently by patients with diabetes mellitus to achieve self-needs without depending on the surrounding environment<sup>(17)</sup>. Diabetes treatment with self-management is primarily done by exercising, adjusting your diet, using a medication, controlling blood sugar regularly, and taking regular foot care. Self-management is an important component of self-care for DM patients, the better DM patients do self-management, their quality of life will increase<sup>(18)</sup>.

Based on the results in Table 2, it is known that 56 respondents have high self-management, and 12 respondents have low self-management. The value of standard deviation (SD) based on the calculation of Ms. Excel got 0.3 while the mean value was 5.45. The level of self-management is determined based on the range of values based on  $SD \pm \text{mean}$ , the value obtained is 5.15-5.74. The majority of patients have high self-management despite living in an urban situation with many food choices that are prohibited to be consumed. Most patients have a high awareness of their disease, so they can control the disease with good self-management. One of the factors that can influence patients in performing self-management is knowledge. Research conducted by Kusniawati<sup>(12)</sup> said that the higher the patient's knowledge, the higher the level of patient self-management.

Another factor that causes patients who have low self-management is cultural factors. This study is located in the Yogyakarta City area, where most foods are sweet and high-calorie foods that increase blood sugar levels, patients must limit themselves more strictly and provide good understanding or refusal so as not to be considered impolite<sup>(19)</sup>. The results of the patient self management lever can be seen in Table 2.

**Table 2. Patient self-management level.**

No	Self management	Frequency	Percentage
1	High	56	82%
2	Low	12	18%

**Drug Use Compliance.** The level of adherence is an assessment of the patient that is used to determine whether a patient has followed the rules of drug use in undergoing therapy. The level of compliance was measured using the MMAS-8 questionnaire which consisted of 8 question items. One of the factors that play a role in the failure to control blood glucose in patients with diabetes mellitus is the patient's non-adherence to treatment. The level of adherence to drug use was also assessed based on each question item in the questionnaire. Respondents' non-compliance in using drugs was caused by several things, namely accidentally forgetting to take medication, respondents who felt they were getting better and respondents

who were not comfortable using drugs every day. The results of the questionnaire can be seen in Table 3.

**Table 3. Drug use compliance.**

No	Drug use compliance	Frequency	Percentage
1	Compliant	18	26.5%
2	Enough	39	57.3%
3	Incompliant	11	15.2%
Total		68	100%

Relationship Between Knowledge Level and Self-Management. The normality test of the data was carried out with the Kolmogorov Smirnov test using SPSS version 23. The results of the normality test with SPSS obtained the Asymp value. Sig (2 tailed) of 2.200c,d. The data normality test was conducted to determine whether the data were normally distributed and further tests could be carried out. Based on the data obtained a significance value of 0.2 which is greater than 0.05, then the data is normally distributed. Data that are normally distributed indicate that there is no significant data deviation, this means that there is not much difference between the overall respondents.

**Table 4. Cross-testing the patient's knowledge level and self-management.**

Knowledge Level	Self-management		Total
	High	Low	
Good	46	9	55
Enough	10	1	11
Deficient	0	2	2
Total	56	12	68

Table 4 shows that the majority of respondents with a good level of knowledge have high self-management. Research conducted by Lawrence Green's (Preced-Proceed Behavior Theory) states that a patient's knowledge about the illness, treatment methods, and therapy plans will affect the success of therapy in self-management. The role of knowledge is very important in patient self-management, if the patient does not know the cause and how to manage the illness, self-management will be hampered. This can bring the patient to a worse disease condition, namely disease complications. Other studies say that the knowledge of DM patients is also related to patient compliance with self-management at home<sup>(20)</sup>.

According to<sup>(21)</sup> knowledge of DM is a tool that helps in carrying out diabetes management throughout his life, thus the better people understand their disease, the more they will understand how to change their lifestyle.

Based on the chi-square test, the significance value obtained from 68 respondents, the significance value is less than 0.05, which is 0.007. The results of this correlation test are following the allegations that prove that there is a relationship between the level of knowledge and self-management of Type 2 DM patients at the Gading Clinic, Yogyakarta. This study shows that the better one's knowledge, the better the ability to self-management the disease. These results are by research conducted by Umah<sup>(22)</sup> which states that there is a relationship between the level of knowledge and self-management in DM patients.

Relationship Between Knowledge Level and Drug Use Compliance. The normality test of the data was carried out with the *Kolmogorov Smirnov* test using SPSS version 23, the normality test of the data was carried out to determine whether the data were normally distributed and further tests could be carried out. Based on the data obtained a significance value of 0.000 which is smaller than 0.05, then the data is not normally distributed. Data that are not normally distributed indicate that there is a significant data deviation, this means that there is a difference between all respondents.

Table 5 shows the level of knowledge of good respondents the majority have moderate drug use compliance. Research conducted by Yuwindry [10] states that the level of knowledge of patients with type 2 diabetes mellitus at PKU Muhammadiyah Hospital Surakarta has a significant effect on drug use compliance by 25.1% or an estimated value of 0.251 with a significance level or t count of 5.545. This means that the level of knowledge has an effect of 25.1% on adherence to drug use. The level of patient knowledge is stated to have a significant effect on drug use compliance because the t-count value is 5.545, which is greater than the confidence level, which is 1.96. These results are different from the results that the researchers did, this is due to differences in the respondents used. Based on the chi-square test, the

**Table 5. Cross-testing the level of knowledge and compliance with drug use.**

Knowledge level	Drug use compliance			
	Compliant	Enough	Incompliant	Total
Good	0	1	1	2
Enough	3	6	2	11
Deficient	8	32	15	55
Total	11	39	18	68

significance value obtained from 68 respondents, the significance value is more than 0.05, which is 0.734. The results of this correlation test are not by the allegations which prove that there is no relationship between the level of knowledge and adherence to drug use in Type 2 DM patients at the Gading Clinic, Yogyakarta.

### CONCLUSION

From this study, it can be concluded that there is a relationship between the level of knowledge and self-management of Type 2 DM patients at the Gading Clinic, Yogyakarta, as evidenced by the results of the 0.007 chi-square correlation test which is  $<0.05$ . And there is no relationship between the level of knowledge and adherence to drug use in Type 2 DM patients at the Gading Clinic, Yogyakarta, as evidenced by the results of the 0,734 chi-square correlation test which is  $>0.05$ .

### ACKNOWLEDGEMENTS

Thank you to all those who have helped in the implementation of this research, Thank you to the Gading Clinic Yogyakarta and the Indonesian Pharmacy Academy Yogyakarta.

### REFERENCES

- Adikusuma W, Perwitasari DA, Supadmi W. Evaluasi kualitas hidup pasien diabetes melitus tipe 2 Rumah Sakit Umum PKU Muhammadiyah Bantul. Pros Simp Nas Peluang Dan Tantangan Obat Tradis Dalam Pelayanan Kesehatan Form. 2014:32-9.
- Kemenkes RI, Hasil RISKESDA 2018, Badan Penelitian dan Pengembangan Kesehatan, Kementerian Kesehatan Republik Indonesia, 2018. Jakarta
- Lin CC, Anderson RM, Chang CS, Hagerty BM, Loveland-Cherry CJ. Development and testing of the diabetes self-management instrument: a confirmatory analysis. *Research in Nursing & Health*. 2008 Aug;31(4):370-80.
- Marcovitch H. *Black's Medical Dictionary*. Edisi ke 41. United States: A&C Black;2005. p. 300.
- Kusnanto K, Sundari PM, Asmoro CP, Arifin H. Hubungan tingkat pengetahuan dan diabetes self-management dengan tingkat stres pasien diabetes melitus yang menjalani diet. *Jurnal Keperawatan Indonesia*. 2019;22(1):31-42.
- Kaplan H.I, Sadock B.J, Grebb J.A. *Sinopsis psikiatri Jilid 2*. Terjemahan Widjaja Kusuma. Jakarta: Binarupa Aksara. 2010. p. 17-35.
- Niven, Neil. *Psikologi kesehatan keperawatan pengantar untuk perawat dan profesional kesehatan lain*. Jakarta: EGC; 2002
- Kristianingrum Y, Budiyan K. *Dukungan Keluarga dan Kepatuhan Minum Obat pada Orang dengan Diabetes Melitus*. *Psycho Idea*. 2011;9(2).
- Yuwindry I, Wiedyaningsih C, Widodo GP. Pengaruh Pengetahuan Terhadap Kualitas Hidup Dengan Kepatuhan Penggunaan Obat Sebagai Variabel Antara Pada Pasien Dm. Pengaruh Pengetahuan Terhadap Kualitas Hidup Dengan Kepatuhan Penggunaan Obat Sebagai Variabel Antara Pada Pasien Dm. 2016;6(4):249-54.
- Garcia AA, Villagomez, ET, Brown SA, Kouzekanani K, Hanis CL: The Starr County Diabetes Education Study: development of the Spanish-language diabetes knowledge questionnaire. *Diabetes Care* 24: 16–21, 2001. *Diabetes Care*. 2001;24(5):973.
- Kusniawati. Analisis faktor yang berkontribusi terhadap self care diabetes pada klien diabetes melitus tipe 2 di rumah sakit umum Tangerang. Tesis. Depok: Universitas Indonesia; 2011.
- Rasdianah N, Martodiharjo S, Andayani TM, Hakim L. Gambaran kepatuhan pengobatan pasien diabetes melitus tipe 2 di Puskesmas Daerah Istimewa Yogyakarta. *Jurnal Farmasi Klinik Indonesia*. 2016;5(4):249-57.
- Arikunto, S. *Prosedur penelitian suatu pendekatan praktik*. Jakarta: Rineka Cipta; 2016.
- Morisky DE, DiMatteo MR. The morisky 8-item self-report measure of medication-taking behavior (MMAS-8). *Journal of Clinical Epidemiology*. 2011;64(3).
- Sugiyono. *Metode penelitian pendidikan pendekatan kuantitatif, kualitatif, dan R&D*. Bandung: Alfabeta; 2013.
- Kholifah, S.N. *Modul Bahan Ajar Cetak Keperawatan Gerontik*. Jakarta : Kemenkes RI Pusdik SDM Kesehatan; 2016
- Luthfa I, Fadhilah N. *Self Management Menentukan Kualitas Hidup Pasien Diabetes Mellitus*. *Jurnal Endurance: Kajian Ilmiah Problema Kesehatan*. 2019;4(2):402-10.
- Primanda Y., Kritpracha C., Thaniwattananon P. *Managemen diri perilaku diet pasien diabetes*. Thesis of Prince of Songkla University Thailand; 2011.
- Siregar CJ. *Farmasi klinik teori dan penerapan*. Jakarta: Penerbit Buku Kedokteran EGC; 2006
- Notoatmodjo S. *Kesehatan masyarakat ilmu dan seni*. Jakarta: Rineka Cipta; 2011
- Umah, Choerul Imadati. Hubungan tingkat pengetahuan dengan self-management pada pasien diabetes mellitus di poliklinik RSI Sultan Agung. Semarang: Universitas Islam Sultan Agung; 2019.