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DOI Number: 10.5958/0973-9130.2019.00520.6 Self Care Management Client DM Type 2 in Tambakrejo Community Health Center, Surabaya Adin Mu'afiro1, Joko Suwito1, Kiaonarni Ongko Waluyo1, Irine Christiany1
1Department of Nursing, Health Polytechnic of Surabaya, Indonesia
Abstract Background: Diabetes mellitus is a chronic disease that lasts for life. Complications can be prevented with optimal glycemic control and self-care of the DM client. The study aimed were to identify the suitability of blood sugar and HBA1C levels with DM therapy target and the implementation of self-care management of Type 2 Diabetes Mellitus Client at Tambakrejo Community Health Center Surabaya. Method: The type of research was descriptive. The population was all DM type 2 clients who underwent treatment at Tambakrejo Community Health Center, Surabaya. The sample size was 30 people. The research variables were blood sugar and HBA1c, the implementation Self Care Management of Client DM type2. The research instruments used were: Result of fasting blood sugar level; HBA1C levels; Self-Care Management DM Questionnaire. Data analysis was done by descriptive 95% confidence level (α = 0,05). Results: The results showed most (80.0%) DM type2 clients were female. Most clients as housewives were 17 people (56,7%). Average age of DM Type 2 clients was 55.53 years. Duration of illness of client DM type 2 was 5.7 years. The results showed that the lowest fasting blood sugar level was 149.80 mg% (SD = ± 52.936 mg%; 95% CI: 130.03 – 169.57 mg%). The highest fasting blood glucose level was 366.63 mg% (SD = ± 129.57 mg%; 95% CI: 318.25 – 415.02 mg%). The mean HBA1C levels were 8.74% (sd = ± 1.81%; 95% CI: 8.06 - 9.42). Implementation of Self-Care DM Type 2 Client in taking drugs or insulin mostly 66.7% has often been the rule. Most (63.3%) have also frequently performed medical re-control to the doctor. There was 46.7% of DM Type2 clients as recommended in checking blood sugar levels and there were 36.7% of clients who have been recommended in their control and exercise activities. Conclusion: DM type2 clients at Tambakrejo Community Health Center Surabaya had average fasting blood glucose levels and HBA1C levels were still not reaching Target of Diabetes Mellitus

Therapy according to ADA (2010). Client DM Type 2 at Tambakrejo Community Health Center Surabaya has been frequently self-care (medication / insulin use and health check control). DM Type2 clients partially check blood sugar levels and control diits as recommended, and only a small fraction occasionally engages in activity / exercise. Keywords: blood sugar levels, HBA1c, DM self-care, Introduction in this new millennium. WHO, International Diabetes Diabetes mellitus is a big and growing problem, Federation (IDF) (2017) state there are 415 million incurring a very high and over-increasing cost in society adults with diabetes. By 2040 it is estimated to increase and has emerged as an epidemic worldwide. Lifestyle to 642 million people. There are 1 in 10 adults with changes and urbanization appear to be an important diabetes and as many as 46.5% are undiagnosed.(1) cause of this problem, and are continuously increasing Indonesia ranks seventh of the world's population affected by diabetes is 10,021,400. Every six seconds, Corresponding author: There is one person died of diabetes. One of eleven Adin Mu'afiro (adinmuafiro@gmail.com) adults have diabetes. Seven out of ten diabetics Address: Prof. Dr. Moestopo Street-8C, Surabaya, develop complications so that quality of life decreases Indonesia and accelerates the occurrence of death(1). Diabetic Indian Journal of Forensic Medicine & Toxicology, October-December 2019, Vol. 13, No. 4 1540 complications can be prevented by optimal glycemic control. Optimum glycemic control is essential. The evidence shows that in Indonesia the target of achieving glycemic control has not been achieved, mean HbA1c is still 8%, still above the desired target of 7%(2). The results of Santi and Oktaviana (2013) studies at Lidah Kulon Community Health Center Surabaya showed that most (38.9% of 69 DM clients) had mean random blood sugar levels more than 308,071 mg / dl) and most did HBA1C examination ≤ 5 times In a year(3). The lack of good glycemic control is attributable to the deterioration of the client's physiological condition, the avoidance of preventive behavior. glycemic control can use The four pillars of DM control are exercise and regulation of diit (high and low carbohydrate), education and drug consumption(4). Diabetes mellitus is a chronic disease that will be suffered for life. Uncontrolled Diabates mellitus makes the journey of complications of illness and death more rapid. Diabetes mellitus clients who experience complications become family burdens and have a high cost of care. By controlling blood sugar levels remained normal it is said that people with DM are controlled, so it is same with normal people. Clients become comfortable, safe, quality of life increases. The objectives of the study were: 1) To identify the suitability of blood sugar and HBA1C levels with DM therapy target and 2) to examine the implementation of self- care management of Type 2 Diabetes Mellitus Client at Tambakrejo Community Health Center Surabaya. Method The type of research was descriptive. The study population was all DM type 2 clients who underwent treatment at Tambakrejo Community Health Center, Surabaya. The sample size was 30 people. The research variables were blood sugar and HBA1c, the implementation Self Care Management of Client DM type2. The research instruments used were: Result of fasting blood sugar level; HBA1C levels; Self-Care Management DM Questionnaire. Data analysis was done by descriptive 95% confidence level (α = 0.05) Finding Demographic Client DM Type2 at Tambakrejo Community Health Center, Surabaya Table 1. Distribution of Sex and Employment Client DM Type 2 at Tambakrejo Community Health Center, Surabaya Variable f % Sex -Male -Female 6 24 20.0 80.0 Jumlah 30 100 Employment 1. 2. 3. 4. 5. 6. 7. Not Working Household Civil Servants Pension Self-employed Private Trade 1 17 1 1 5 4 1 3.3 56.7 3.3 3.3 16.7 13.3 3.3 Total 30 100 Table 2. Distribution of Age and Duration of Illness in Client DM Type 2 at Tambakrejo Community Health Center, Surabaya Variable Mean SD± 95% CI Age (Year) 55.53 11.079 51.40 – 59.67 Duration of illness DM (Year) 5.70 3.664 4.33 – 7.07 The results of analysis in table 2 obtained the average age of DM Type 2

clients was 55.53 years (SD± 11.079 years). From the interval estimation results it can be believed that 95% of the average age of DM Type2 clients is between 51.40 to 59.67 years. Result of analysis of Duration of illness DM type 2 got average is 5.7 year (SD ± 3.664 year). From the interval estimation results it can be believed that 95% of the average duration of illness of DM Type2 clients is between 4.33 to 7.07 years. Table 3. Complaints Perceived by Client DM Type 2 at Tambakrejo Community Health Center, Surabaya A Perceived Complaint f % Blurry Eyes 6 20.0 Easy to tired, weak, sleepy 8 26.7 The extremities are stiff and numb 16 53.3 Total 30 100 1541 Indian Journal of Forensic Medicine & Toxicology, October-December 2019, Vol. 13, No. 4 Table 3 showed that the problem of DM Type 2 clients was that most (53.3%) complained was the extremities (hands and feet) felt stiff and numb, there were small complaints of blurred eyes and tiredness, weakness and drowsiness, 20.0% and 26.7% respectively. Fasting Blood Glucose and HBA1C Levels DM Type 2 Client Table 4. Average Fasting Blood Sugar Level and HBA1C of Client DM Type 2 at Tambakrejo Community Health Center, Surabaya Variable Mean SD± 95% CI Lowest fasting blood glucose level (mg%) 149.80 52.936 130.03 – 169.57 Highest fasting blood glucose level (mg%) 366.63 129.575 318.25 – 415.02 HBA1C level 8.74 1.8139 8.063-9.417 Table 4 showed the lowest fasting blood sugar levels in DM type 2 clients of 149.80 mg% (SD ± 52.936 mg%). From the interval estimation results it can be believed that 95% of the lowest fasting blood glucose levels of DM Type2 clients are between 130.03 mg% up to 169.57 mg%. The results of the study showed the highest fasting blood glucose levels in DM type 2 clients of 366.63 mg% (SD ± 129.575 mg%). From the interval estimation results it can be believed that 95% of the lowest fasting blood glucose levels of DM Type2 clients are between 318.25 mg% to 415.02 mg%. The result of measurement analysis of HBA1C content of DM type 2 clients was 8.74% (SD ± 1.81%). From the interval estimation result, it can be believed that 95% of the average HBA1C level was between 8.06% to 9.42%. Implementation of Personal Care Management of DM Type 2 Client Table 5 Implementation of self Care Management Type 2 DM Client at Tambakrejo Community Health Center, Surabaya Self Care Management of client DM Tipe 2 Implementation Never Sometimes As Recommended often Total f % f % f % f % f % Check Blood Sugar Levels - - 4 13.3 14 46.7 12 40 30 100 Diit Control 1 3.3 9 30 11 36.7 9 30 30 100 Drug / Insulin Management - - 3 10 7 23.3 20 66.7 30 100 Activity / Sports 2 6.7 11 36.7 9 30 8 26.7 30 100 Health Re-Control - - 1 3.3 10 33.3 19 63.3 30 100 Table 5 shows that the implementation Self Care Management of Client DM Type 2 care mostly 66.7% had often been in accordance with the rules of therapy in drug or insulin management. Most (63.3%) also had frequent medical re-control to the doctor; Implementation self care management of client DM type2 was almost partially (46.7%) as recommended in checking blood glucose level and there were 36.7% clients which had been recommended in control of their activity and activity. Discussion Implementation Self-Care Management of the client DM Type 2 at Tambakrejo Public Health Center at table 6 results mostly 66.7% have often been in accordance with the rules of therapy in the management of medication or Indian Journal of Forensic Medicine & Toxicology, October-December 2019, Vol. 13, No. 4 1542 insulin. Most (63.3%) have also frequently performed medical re-control to the doctor. Implementation self care management of client DM type2 is almost partially (46.7%) as recommended in checking blood glucose level and there are 36,7% clients which have been recommended in control of their activity and activity. This condition shows the self care management of client DM that is good. But in fact the laboratory results are still found The lowest fasting blood sugar levels DM clients still have not achieved the target therapy of Diabetes Mellitus clients according to ADA (Fasting Blood Sugar 90-100 mg / dl)(6). Table 5 shows that the lowest blood glucose level of client DM type2 in Tambakrejo Surabaya

Public Health Center is 149.80mg% with estimated interval can be believed 95% of the average fastest fasting blood glucose level of DM Type2 client is between 130.03 mg% Up to 169.57 mg%. Measurement results Average HBA1C levels also have not met the Target of Diabetes Mellitus client therapy according to ADA (2010) is HBA1C Control <6.5%. In table 5 From the interval estimation result, it can be believed that 95% of the average HBA1C levels of DM Type 2 clients are between 8.063% to 9.417%. Various complications can occur in this Diabetes Mellitus client include acute complications (Coma hypoglycemia, ketoacidosis, nonketotic hyperosmolar coma) as well as the development of chronic complications (Macroangiopathy, Microangiopathy, Neuropathy, Nephropathy, Retinopathy, Cardiovascular Disease). Proven symptoms of micro and macrovascular chronic complications are seen in the complaints felt by DM Type2 clients in table 4 that most (53.3%) of the rigid and numb limbs are signs of peripheral neuropathy. A small percentage (20.0%) have retinopathy, ie blurred eyes. The presence of symptoms of stiff hands, numbness and blurry eyes indicate the presence of microvascular complications (neuropathy and diabetic retinopathy) (7). The emergence of symptoms of fatigue, weakness, drowsiness that often disturb clients is a complaint due to chronic degenerative complications in blood vessels and nerves(8). The complaint is due to insulin deficiency or absence so that glucose can not enter into the cell. This causes the cells in a state of hunger, although blood glucose increases in the body. Glucose can not be used as energy.(9),(10) These symptoms may be more severe if the mean condition of the highest fasting blood sugar levels experienced by DM clients by 366.63mg% is not getting the attention well (table 5). This condition should be a serious concern for the Health Team with families and DM clients to lower their blood sugar levels until they reach the therapeutic target so that clients avoid further complications. The client DM type 2 at Tambakrejo Community Health Center Surabaya there are two risk factors of diabetes mellitus that can be controlled according to ADA that is ≥ 45 years old and there are parents who suffer DM. This condition is found in tables 2 and 3, the average age of DM Type 2 clients is 55.53 years (95% CI: 51.40 - 59.67) and there are 56.7% of DM Type 2 clients who have suffered parents DM. In Table 2 From the interval estimation results, it can be believed that 95% of the average duration of illness of clients DM Type2 at Tambakrejo Community Health Center Surabaya is between 4.33 to 7.07 years. This condition is dangerous for DM clients if they do not get good treatment can accelerate the damage of micro and macrovascular chronic complications. In addition, other factors that affect the control of blood sugar levels other factors of education or family knowledge level. Table 1 shows that most (56.7%) are housewives and the average age factor of DM clients is 55.53 years. A person working as a housewife or an elderly has the limitation to understand adequate knowledge about DM including the ability to understand how to prevent further complications of DM. It is very important to get special attention from the health and family team to perform optimal Glycemic Control. Diabetic complications can be prevented by optimal glycemic control through the four pillars of DM control, exercise and regulation of diit (high and low carbohydrate), education and drug consumption(2). Self care management DM in line with these include; Check blood sugar levels (Self Blood Sugar monitor), control diit, proper management of drugs / insulin, activity / exercise and check health regularly. 1543 Indian Journal of Forensic Medicine & Toxicology, October-December 2019, Vol. 13, No. 4 Conclusion The conclusions of the research are as follows: 1) Client DM type2 at Tambakrejo Community Health Center Surabaya still has not reached Target Diabetes Mellitus Therapy according to ADA (Fasting Blood Sugar 90-100 mg / dl ; HBA1c <6.5%). The average lowest fasting blood sugar level was 149.80 mg% (95% CI = 130.03 mg% - 169.57 mg%). Average HBA1C levels were 8.74% (95% CI: 8.06% - 9.42%); 2) Client DM Type 2

in Tambakrejo Community Health Center, Surabaya partly has often done self-care (management of drug / insulin use and health check control) as recommended. DM Type2 clients partially check blood sugar levels and control diits according to recommendation, and only a small part occasionally engages in activity / exercise. Some of the suggested things are: 1) Families and clients should increase regular activity of DM Exercise to avoid complications and improve blood circulation. The client should also improve the knowledge of the control of diit as well as practice monitors and self- blood glucose monitoring (self-monitoring glucose) to determine the development of diagnosis and management of diabetes mellitus therapy; 2) The nurses at health services should provide knowledge about exercise, control and exercise monitor and self-blood glucose monitor (self glucose monitor) for clients and families Diabetes Mellitus tipe2. Additional Informations Conflict of Interest = No Funding Source = Authors Ethical Clearance for medical research = Yes 1. 2. 3. 4. 5. 6. 7. 8. 9. References IDF. IDF Diabetes Atlas [Internet]. International Diabetes Federation. 2017 [cited 2017 May 10]. Available from: http://www.diabetesatlas.org PERKENI. Consensus on Management and Prevention of Type 2 Diabetes Mellitus in Indonesia. Jakarta: Perkeni; 2011. Martini S, Wulandari O. Difference in Complication Event in Patients with Type 2 DM according to Random Blood Sugar. Jur.Berk.Epid. 2013;1:182– 191. PB-PERKENI. Consensus on Management and Prevention of Type 2 Diabetes Mellitus in Indonesia. Jakarta: PB-PERKENI; 2011. Tambakrejo Community Health Center, Surabaya. Profile of Tambakrejo Community Health Center, Surabaya. Surabaya: Tambakrejo Community Health Center; 2015. American Diabetes Associaton. Diagnosis and Classification of Diabetes Mellitus. Care Diabetes Journal. 2010;35(1):64–71. Ignatavicius M, Workman L. Medical Surgical Nursing: Patient Centered Collaboration Care. St. Louis Missouri: Saunders Elsevier; 2010. Mansjoer A, et al. Kapita-Selekta of Medicine. Jakarta: Media-Aesculapius; 2000. Suzanna GS, Brenda GB. Textbook for Medical Surgical Nursing "Brunner & Suddarth". Jakarta: EGC Publisher; 2008. 10. Asdie AH. Pathogenesis and Therapy of Diabetes Mellitus. Yogyakarta: Medika FK-UGM Publisher; 2000.