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Improvement of Diet Behavior in Clients with Diabetes Mellitus Through Health Education

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Abstract

Diabetes mellitus (DM) is a disease that is a problem in public health. DM is a metabolic disorder characterized by hyperglycemia (an increase in serum glucose levels) due to lack of the hormone insulin, decreased effect of insulin and or both. Diet or diet is an important determinant that determines obesity and insulin resistance, so the provision of health education is a way to maintain the stability of insulin in DM clients. This case study aims to get an overview of the implementation of health education in improving the eating habits of DM clients. The method used is descriptive in the form of case studies with the criteria that the subject is a family with diabetes mellitus health problems through health education intervention about diet. The results of the case study showed that there was a decrease in blood sugar levels, good motivation of the families in implementing the DM diet, and behavioral changes by 76% (good category) in subject I, as far as subject II behavior change was 80% (good category) Based on the results of this case study it is expected that nurses through health cadres are able to monitor the implementation of DM diet in families with optimal DM health problems.

Keywords: Diabetes Mellitus, Blood Sugar Levels, Implementation of A Diet of Diabetes Mellitus

Preliminary

Diabetes militus (DM) is a collection of symptoms that arise in a person due to the body having problems controlling blood sugar levels. The disorder can be caused by inadequate secretion of the hormone insulin, impaired insulin function (insulin resistance) or it can be a combination of the two (Soegondo, 2015).

Diet or diet is an important determinant of obesity and insulin resistance. Consumption of high-energy, high-fat foods, in addition to low physical activity, will alter the energy balance by storing energy as stored fat which is rarely used. Excessive energy intake will increase insulin resistance even though there has been no significant weight gain. Diets high in calories, high in fat and low in carbohydrates are associated with type 2 diabetes mellitus. A diet rich in energy and low and will increase weight gain and insulin resistance even in low-risk populations (Dewi, 2013).

In the community, it is recommended to adopt a healthy diet to avoid diabetes mellitus, especially type 2 diabetes mellitus by consuming enough fat and carbohydrates and increasing fiber consumption, in addition to doing physical activity or exercising regularly. With regard to the food consumed, a number of factors influence the response of glycemia

to food. These factors include the amount of carbohydrates, types of sugar, starch properties, how to cook and process food and the form of the food, in addition to other food components. (Susanto, 2013).

Diabetes mellitus is a degenerative disease that can be controlled with four pillars of management. Increased blood sugar in diabetes mellitus patients as a cause of imbalance in the amount of insulin. Therefore, diet is one of the important things in the four pillars of diabetes mellitus management because patients do not pay attention to a balanced diet, diet is one of the preventive measures so that blood sugar does not increase (Seogondo, 2015).

Irregular eating patterns that occur in society today can cause an increase in the number of degenerative diseases, one of which is diabetes mellitus (Suiraoka, 2012).

A good diet must be understood by people with diabetes mellitus in regulating their daily diet. This pattern includes setting a schedule for people with diabetes mellitus, which is usually 6 meals per day divided into 3 large meals and 3 interlude meals. The recommended amount of food (calories) for people with diabetes mellitus is more frequent meals with small portions, while what is not recommended is to eat large portions, such as breakfast (20%), morning interlude (10%), lunch (25%), lunch (10%), dinner (25%), evening interlude (10%). The type of food needs to be considered because it determines the speed at which blood sugar levels rise (Tjokroprawiro, 2012).

According to the results of research by Andi Mardhiyah Idris and friends (2014), it is evident that type 2 diabetes mellitus patients who have less than needed carbohydrate intake tend to be unable to control blood sugar levels compared to patients whose carbohydrate intake is as needed. The amount of carbohydrates consumed from mains and snacks is more important than the source of these carbohydrates.

According to the World Health Organization (WHO), this is an increase in the number of people with diabetes mellitus in Indonesia from 8.4 million in 2000 to around 21.3 million in 2030. Meanwhile, the International Diabetes Fender (IDF) in 2009 estimates that the number of people with diabetes mellitus will increase from 7.0 million in 2009 to 12.0 million in 2030.

According to Basic Health Research (Riskesdas), the prevalence of diabetes mellitus sufferers in Indonesia has increased to 1.5 percent in 2018 and in DKI Jakarta it has increased to 2.6%. Meanwhile, in 2016, 3,997 people from Pancoran District Health Center annual report data found 1,850 people suffering from Diabetes Mellitus and in 2017 data on the number of patients visiting the Puskesmas were 42,017 people found 2,016 people suffering from Diabetes Mellitus, while in 2018 people with Diabetes Mellitus as many as 1,144 people with a target achievement of 854 people with a result of 6.61%.

Diabetes mellitus is known by the public as diabetes or a chronic disease characterized by an increase in blood sugar levels as a result of disruption of the metabolic system in the body. This can be caused by the failure of the pancreas to produce the hormone insulin as needed (Suiraoka, 2012).

Carbohydrates can be digested and absorbed in the form of monosaccharides, especially sugar. The absorption of sugar causes an increase in blood sugar levels and encourages an increase in blood sugar levels and encourages increased secretion of the hormone insulin to control blood sugar levels More about this source textSource text required for additional translation information (Linder, 2012).

Government efforts in dealing with diabetes mellitus give priority to preventive and promotive efforts, without neglecting curative efforts, and are carried out in an integrated and comprehensive

manner between government, society and the private sector.

Regulation of the minister of health of the Republic of Indonesia Number 1575 (2005), established the Directorate of Contagious Health Control which has the main task of establishing communities to live healthy lives by controlling risk factors for non-communicable diseases (Ministry of Health, 2010).

Method

This type of research design is a descriptive case study which aims to identify an increase in dietary behavior in clients with diabetes mellitus after being given health education. The subjects of this study consisted of 2 families who have family members with diabetes mellitus health problems.

Separating families who are the subject of research are clients who seek treatment at the Pancoran District Health Center who meet the criteria, namely having been diagnosed with diabetes mellitus by health personnel, living in the Pancoran District area, being able to communicate well and cooperatively and are willing to be research subjects.

After the subject agreed to participate in the next study, the researcher made 3 home visits to conduct health education. At the first meeting, the authors provided health education about diabetes mellitus which was carried out for 30 minutes and gave a pre-test questionnaire on diabetes mellitus eating habits and provided an observation sheet regarding the food consumed by the client.

The second meeting provided health education about the prevention and treatment of diabetes mellitus for 30 minutes. Then the third meeting provided health education about modifying a healthy environment for clients with diabetes mellitus and the benefits of health services which was carried out for 30 minutes.

Then the researcher returned to visit the subject's house two days after giving health education to fill out a post-test questionnaire for diabetes mellitus treatment behavior and to ask for the observation sheet of food consumed by the client again.

Result

In this case, 2 people with diabetes mellitus were involved as case study subjects whose characteristics are described in the following table.

Table-1 Characteristics of the two subjects

No	Characteristics	Subject I	Subject II
1	Age	58 years	60 years
2	Education	Not completed in primary school	Senior High school
3	Family Type	*Single Parents*	*Extended Family*

Based on table-1, it is known that there are differences in age, education and family type in the two subjects. Subject I was 58 years old, education did not complete elementary school, type of family was single parent. While subject II is 60 years old, the last education is high school and has the type of extended family.

Based on the results of the study, it is known that after nursing intervention diabetes mellitus dietary behavior, the subject's knowledge of diabetes mellitus diet behavior has increased as shown in the following table.

Table-2 Table of evaluation of diabetes mellitus diet behavior

Subject	Behavior			
	Pre Test	Information	Post Tes	Information
I	54 %	Less	76 %	Good
II	70 %	Enough	80 %	Good

Based on table-2, it is known that there is an increase in knowledge of eating patterns in clients with diabetes mellitus, where in subject I an increase of 22%, while in subject II an increase of 10%.

It is known that after the intervention of health education in improving the behavior of the diet of biabetics mellitus in the way of daily client food processing is described as follows.

Diagram-1
Subject Observation Diagram I

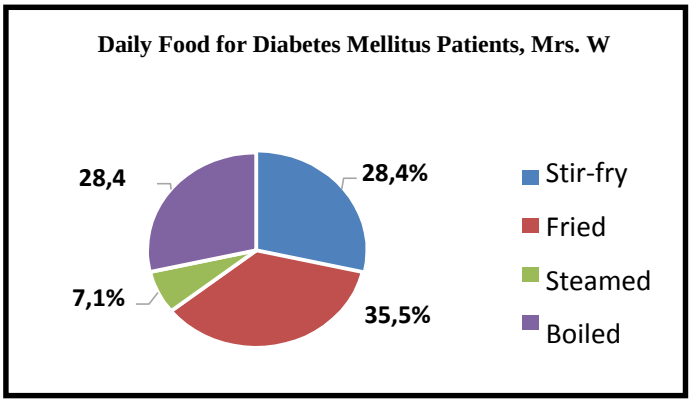
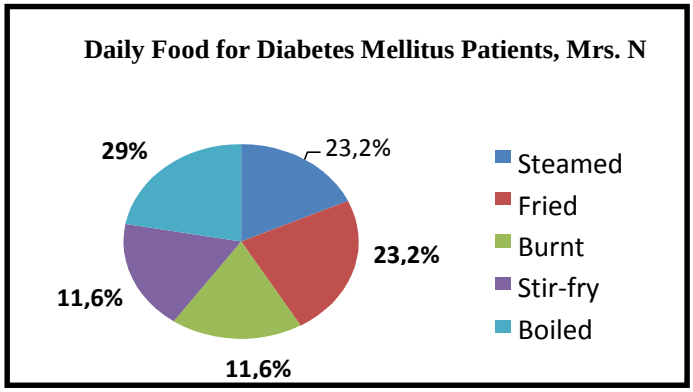


Diagram-2
Subject Observation Diagram II



Based on diagrams 1 and 2 it is known that the behavior of Subject I in how to cook food consumed more fried foods 35.5%, while the behavior of subject II in how to cook food consumed more boiled food 29%.

Furthermore, to clarify the subject's ability before and after nursing intervention can be described in the table below.

Table-3 Blood Sugar Measurement Results Before and After Intervention

Subject	Pre Implementation	Post Implementation
I	450 mg/dL	320 mg/dL
II	120 mg/dL	70 mg/dL

Based on table-3, it is known after measuring blood sugar levels for 4 days. Where on the first day of Subject I, the results of blood sugar measurements before implementation were 450 mg / dL and decreased 320 mg / dL. Whereas in Subject II, the results of blood sugar measurements before implementation were 120 mg / dL and decreased by 70 mg / dL.

Discussion

At the time of the assessment on subject I, the complaints felt by the client were feet tingling and feeling numb, while in subject II the complaints felt were easily tired and the feet felt tingling. The two subjects with a history of diabetes mellitus type II, the authors carried out the implementation of health education to increase client knowledge about health education in improving dietary behavior in clients with diabetes mellitus, the result was an increase in behavior between before and after health education was carried out for 3 days. In subject I, after 3 days of health education in improving dietary behavior in clients with diabetes mellitus, there was a 76% increase in either category. In subject II, after 3 days of health education in improving dietary behavior in clients with diabetes mellitus, there was an 80% increase in the good category.

The factors that influence family behavior are education, subject I who was educated did not complete elementary school while subject II of the last education was high school. In the results of behavior before and after health education, it was concluded that the profile of a person's education could influence a person's behavior as evidenced by the results of the questionnaire subject I was still not at the good category stage while subject II was categorized quite good, but after being given health education there was an increase in behavior in subject I and subject II.

This is in accordance with research disclosed by Notoatmodjo (2010) that education will affect one's cognitive in improving behavior. Because

behavior is not formed by only one sub, namely education, but there are other sub-fields that will also influence a person's behavior, such as experience, information, personality and others. Generally, high knowledge will have an impact on increasing one's awareness in an effort to minimize diabetes mellitus. However, high knowledge actually does not determine whether a person will develop diabetes mellitus or not. But other factors such as occupation, lifestyle, heredity and others also affect a person in getting diabetes mellitus.

In the case study that has been carried out, the results obtained from family support factors for the diabetes mellitus diet where the family of subject II provides more support in the form of monitoring the DM diet so that subject II's blood levels are more controlled than subject I who cannot family support in monitoring the DM diet. This is in accordance with Waspandji (2009) which states that supervision and monitoring in the management of DM at any time is important. Where the role of the family is needed, especially in controlling and controlling blood sugar levels in DM sufferers. According to Valery (2012), family is a major role in health care and helps patients in the care and control of diabetes mellitus, providing encouragement and motivation to patients. According to the Association (2009), diabetes mellitus management planning must be carried out simultaneously between patients and their families so that blood sugar levels can be controlled.

The results of the case studies show that knowledge about diabetes mellitus in both subjects has increased with good knowledge, because the family is familiar with health problems, can take decisions, can care for family members who suffer from diabetes mellitus, can modify the environment and take advantage of health facilities. Knowledge is one of the supporters of behavior change in improving diabetes mellitus dietary behavior. Several studies have shown that a lack of knowledge about diabetes mellitus causes patients to tend to not adhere to medication, diet, and insulin (Kong, Yein, & Jenn, 2012).

Conclusion

Education subject I who was educated did not complete elementary school while subject II of the last education was high school. a person's educational profile can influence one's behavior.

Family support factors for diabetes mellitus diet where the family of subject II provides more support in the form of diabetes mellitus dietary care so that subject II's blood levels are more controlled than subject I who cannot support family in monitoring the diabetes mellitus diet.

This knowledge is one of the supporting factors for behavior change in improving diabetes mellitus dietary behavior.

The results of a case study on the implementation of health education in improving dietary behavior in clients showed that there was a decrease in blood sugar levels in carrying out the DM diet and experienced a behavior change of 76% (good category) in Mrs. W while at Ny. N experienced a change in behavior by 80% (good category).

Suggestion

From the results of this case study, it is hoped that nurses through health cadres will be able to monitor the implementation of the DM diet in families with DM health problems optimally, and the author suggests families to be able to do what has been said at the time of health education about diabetes mellitus and its treatment and still control it regularly regularly to health facilities to get follow-up and diabetes mellitus.

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Bibliography

Arikunto, S., (2013). *Prosedur penelitian suatu pendekatan praktik.* Jakarta: Rhineka Cipta.

Baradero, M. (2009). *Klien gangguan endokrin:* Seri asuhan keperawatan. Jakarta: EGC

Bunker dan Kowalski (2015). *buku ajar keperawatan dasar*. (Ed. 10, vol.4). jakarta : Buku Kedokteran EGC

Dewi (2013). *Menu sehat 30 hari untuk mencegah dan mengatasi diabetes melitus.* Jakarta: Media Pustaka

Kariadi, S. 2009. *Diabetes? Siapa takut!!*. Bandung : EGC.

Kowalak, J. (2011). *Buku ajaran patofisiologi (profesional guide to pathopysiology).* Jakarta: EGC

Maglaya, A. (2010). *Nursing practic in the comunity*. Ed.5. Marikina: Argounauta Corporation.

Mubarak, W. Santoso, B. Rozikin, K. Patonah, S. (2012). *Ilmu keperawatan komunitas 2.* Jakarta: Sagung Seto

Notoatmodjo, S. (2012). *Metodologi penelitian kesehatan.* Jakarta: Rineka Cipta. Nurrahmani. (2012). *Stop! diabetes.* Yogyakarta: Araska.

Rangkuti, F. (2010). *The power of brands.* Jakarta: Gramedia

Setiawati, L., & Dermawan, C.A. (2011). *Penuntun praktis asuhan keperawatan keluarga.* Jakarta: TIM.

Smeltzer, B. (2010). *buku ajar keperawatan medikal* – bedah. Jakarta: EGC

Soegondo. (2015). *Penatalaksanaan diabetes melitus terpadu.* Jakarta: Balai Penelitian FKUI

Sudoyo, A., W., Setiyohadi, B., Alwi, I., Simadibrata, M., & Setiati, S. (2010). *Buku ajaran penyakit dalam.* Jakarta: Internal Publishing.

Suiraoka. (2012). *Penyakit degeneratif.* Yogyakarta: Nuhamedika.

Susanto, T. (2013). *Diabetes, deteksi, pencegahan, pengobatan.* Jakarta: Buku Pintar ISBN.

Tjokroprawiro. A. (2012). *Garis besar pola makan dan pola hidup sebagai pendukung terapi diabetes melitus.* Surabaya: Fakultas Kedokteran Unair.

Toruan, P., L., Koswara, R.., A. 2012. *Diabetes sakit tapi sehat*. Jakarta: EGC.

Wibowo, S. (2015). *Tanaman sakti tumpas macam-macam penyakit*. Jakarta: Pustaka Makmur

Wijayaningsih, K. (2013). *Standar asuhan keperawatan.* Jakarta: TIM Zainal, A. (2010). *Pengantar keperawatan keluarga.* Jakarta: EGC.

Zainal, A. (2010). *Pengantar keperawatan keluarga.* Jakarta: EGC.