

## EFFECT OF UTILIZING “*SHIFA PROGRAM*” (PROMOTIONAL MEDIA) IT-BASED HEALTH IS SMS BROADCAST ON COMPLIANCE DIET) IN TYPE 2 DIABETES MELLITUS IN DUSTIRA HOSPITAL

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### ABSTRACT

The Diabetes mellitus is one of degenerative disease are getting increase the amount of it recently. Diet planning properly on diabetes mellitus clients is one of keywords to control and manage the blood sugar. Research used quasi-experimental with nonequivalence control group design. The populations in this research were as any as 56 respondents. Data collecting used purposive sampling. Data collecting was analyzed by using univariate with percentage and bivariate with parametric test. Based on parametric test was obtained p value  $0.009 < 0.05$  means that there are effects of syifa program toward diet compliance on diabetes mellitus clients.

*Keywords : Diabetes mellitus diet compliance, syifa program, quasi-experimental with nonequivalence control group design*

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### INTRODUCTION

Diabetes mellitus is a degenerative disease which is currently increasing in number in Indonesia. Diabetes mellitus is characterized by chronic hyperglycemia (prolonged high blood sugar levels) due to work defects and insulin secretion, this disease is a chronic disease that is a public health problem in Indonesia (Suyono, 2009).

Diseases that will be caused include visual disturbances, cataracts, heart disease, kidney disease, sexual impotence, wounds that are difficult to heal and rot/gangrene, lung infections, blood vessel disorders, stroke and so on. Not infrequently diabetics who are already severe undergo amputation due to limb decay due to the Ministry of Health, 2005 (in Trisnawati, 2013).

There are some common symptoms of diabetes mellitus including too much urine, excessive hunger and thirst, sudden or abnormal weight loss, slightly blurred vision, ulcers or sores that are difficult to heal, repeated infection or inflammation, pain headache, fatigue, itching and dry skin.

There are two main categories of diabetes mellitus, namely type 1 and type 2 diabetes. Type 1 diabetes is called insulin dependent, which is characterized by a lack of insulin production. Type 2 diabetes is called non-insulin dependent, due to the body's ineffective use of insulin. Type 2 diabetes constitutes 90% of all diabetes. Gestational diabetes is hyperglycemia that occurs during pregnancy. Impaired glucose tolerance (GDR) This disorder

occurs in the non-fat, obese group and is associated with certain conditions or syndromes (Riyanto, 2015).

Data from WHO (2013) reveals, the number of people with diabetes mellitus worldwide reaches 171,230,000 people and in 2030 it is estimated that the number of people with diabetes in the world will reach 366,210,100 people or an increase of 114% within 30 years. Indonesia is in the 4th largest position with a growth of 152% or from 8,426,000 people in 2000 to 21,275,000 people in 2030. According to Riskandes In (2013) the number of sufferers in West Java was 0.7%, with an estimated number of sufferers There are 418,110 people who have been diagnosed with diabetes by doctors. And data from the Cimahi City Government Health Office in 2014 diabetes was included in the ten most outpatient diseases at the Cimahi city hospital, which was ranked second with 23,568 new cases.

The increase in the prevalence of diabetes mellitus cases goes hand in hand with the increase in risk factors for diabetes itself, factors that influence the increase in the prevalence of diabetes cases include obesity (overweight), lack of physical activity, less consumption of high-fat fiber, smoking, and hypercholesterolemia (Pujiastuti, 2016). According to Suryono (2009), despite advances in research in the field of diabetes mellitus management with the discovery of various types of insulin and the latest

oral drugs, diet is still the main treatment for diabetes management.

Proper diet planning in patients with diabetes mellitus is one of the keys in managing blood sugar control. The diet used as part of the management of diabetes mellitus is controlled based on the content of energy, protein, fat, and carbohydrates (Pujiastuti, 2016). According to Suryono (2009), although patients have received education or counseling related to meal planning, more than 50% of patients do not implement it. Adherence is a term that describes the use of medication or eating in accordance with the instructions covering the time and eating restrictions apply. Dietary compliance can also prevent complications in patients (Abdillah, 2016).

Patient compliance in adhering to a diabetic diet plays an important role in stabilizing glucose sugar levels in people with diabetes mellitus, while compliance itself is an important thing to be able to develop routines (habits) that can help patients follow a diet schedule. There are many causes that make the sufferers disobey in carrying out the diabetes mellitus diet, so it is necessary to appeal to health workers to increase the knowledge of diabetics by providing health promotion about the diabetes mellitus diet. According to Henderson's theory, it provides an overview of the nurse's task in providing health education. Where one of the nurse's roles is as an educator. Where nurses increase knowledge, provide information and change respondents' behavior in a more positive direction (Lestari, 2015), (Negara, 2017).

Health promotion is an effort to change/improve behavior in the health sector accompanied by efforts to influence the environment or other things that greatly affect the improvement of behavior and health quality (Mubarak, 2011). Given the importance of compliance with diabetes mellitus in patients with diabetes mellitus, a health system is needed that can find solutions to improve diabetes mellitus diet compliance using health promotion support interventions. Broadcast SMS can be used to maximize efficiency, effectiveness, and equity of health services through improving health communication. In addition, SMS broadcasts can be used to assist and provide information regarding dietary compliance for people with diabetes mellitus.

"Shifa program" is an IT-based health promotion concept, that is, by using broadcast sms as a health promotion media about dietary compliance, this program is specifically for diabetes mellitus patients. The purpose of this program is to remind patients of the diet that must be followed, as well as to provide health promotion about diabetes mellitus so that diabetics are obedient in undergoing a

diabetic diet. The advantages of this method are that the time required is shorter, its use is simple, it can be used to send messages to many people at the same time and is able to facilitate the delivery of information more closely per individual but not by direct contact, and it is hoped that this "Shifa Program" can increase the level of compliance of diabetics can comply with the diet that must be lived. (Sustainable, 2015)

## METHOD

The method used in this study is a quasi experiment with nonequivalent control group design, with a research design that is a group of research subjects (treatment and control) who measure dietary compliance through a questionnaire compiled by a nutritionist twice, namely before the intervention (pre-test). and after the intervention (post test).

This research was conducted in May 2017 at the Internal Medicine Polyclinic of DustiraCimahi Hospital. The population in this study was not determined, the population was visitors with a diagnosis of type 2 diabetes at the Internal Medicine Clinic at DustiraCimahi Hospital. This study had subjects or samples of patients with diabetes mellitus who entered the inclusion criteria. The total number of samples in the study were 56 people, 28 people as the control group and 28 people as the experimental group. And the addition of 2 drop out samples. The inclusion criteria in this study were respondents who had an android mobile phone/cell phone, were willing to be respondents and took the pre-test and post-test, respondents were able to speak Indonesian, respondents were able to read, write and communicate fluently, and respondents who did not have hearing loss and vision.

Data collection is done by taking primary data and secondary data. The research instrument used for data collection is in the form of observation sheets, tools and materials for checking blood sugar levels and checklists for sent messages. The results of the data normality test that have been carried out show that the results of the pre and post intervention groups and control groups are normally distributed. So the statistical data analysis used is the Dependent simple T test with the decision making of the research hypothesis ( $H_a$ ) it is accepted that the p value is smaller than (0.05).

## RESULTS

Table 4.1 Respondents' Compliance Before Giving the "Shifa Program" Intervention in the Treatment Group and Control Group

Group	Treatment	Group	Control
Obedience	n	N	Percentage
	Percentage (%)		e (%)

Not obey	10	35.7	7	25.0
Obey	18	64.3	21	75.0
total	28	100.0	28	100.0

Source: Primary Data 2017

Table 4.2 Respondents' Compliance After Being Given "Shifa Program" in the Treatment Group and Control Group

Group	Treatment		Control	
	n	Percentage (%)	N	Percentage (%)
Not obey	2	7.1	12	42.9
Obey	26	92.9	16	57.1
total	28	100.0	28	100.0

Source: 2017 primary data

Table 4.4 results of parametric statistical tests of diabetes mellitus dietary compliance before and after being given the "Shifa Program" with the dependent t test in patients with diabetes mellitus at Dustira Hospital

	Results					
	Variable value			Combined value		
Dietary compliance	mean	SD	SE	n	P	T
Before	0.6429	0.48795	0.09221	28		
After	0.9286	0.26227	0.04956	28	0.009	-2.828

Source: 2017 primary data

## DISCUSSION

Diabetes mellitus diet is a way for diabetics to feel comfortable, prevent complications, and improve eating habits, achieve or maintain normal weight and uphold the main pillars of diabetes mellitus therapy. Adherence to the diabetes diet is very important because diet is one of the pillars of the management of diabetes mellitus, the purpose of the diabetes mellitus diet is to maintain blood sugar levels close to normal by balancing food intake and paying attention to 3j, namely adjusting the amount of food according to the calorie needs needed every day, comply with the eating schedule that has been given by the nutritionist, and the last one is to eat the types of foods that are recommended and not to eat foods that are not recommended. Maintaining dietary compliance for diabetics is a difficult challenge because many respondents say they feel burdened by dieting, and there are no reminders to go on a diet, in addition to diet planning, the type and amount of food recommended for respondents is one of the obstacles that make respondents reluctant to go on a diet, in addition to feeling saturated, and bored with therapy carried out in the long term, that is what makes the level of adherence to the diabetes mellitus diet low.

There is an increase in dietary compliance after being given the "Shifa Program" intervention. This is shown by the different values of the increase

between before and after the "Shifa Program" intervention. This shows that respondents are trying to behave positively to improve their ability to maintain and improve their health. to a better way. And can understand the information and motivation obtained. Changes in the increase in the value of higher dietary compliance occurred after being given an intervention using broadcast sms media because respondents were invited to use all their senses to learn and understand the information obtained from the broadcast sms sent by the researcher.

Health workers provide health promotions which can help spread information that can change healthy behavior for a long time by utilizing various media, one of which is information technology. Information technology can help in providing support for health. There is a lot of literature that states that SMS can help improve health status, including patient compliance with diet. As for the control group, there was a decrease in the level of compliance. This can be influenced by the absence of reminding respondents to adhere to a diet, lack of motivation, and lack of knowledge of respondents about the importance of undergoing a diabetes mellitus diet, as well as the absence of disseminating health information, knowingly or not health information plays an important role in increasing one's compliance because of the spread of health information. Health information is a useful strategy to increase knowledge and increase awareness for healthy living habits.

Based on the results of the study, there was an influence on the use of the "Shifa Program" on dietary compliance with diabetes mellitus patients because the p value <0.05. According to the researcher, based on the research conducted, there is a significant effect between the intervention of the "Shifa Program" before and after being given the SMS broadcast. This is indicated by the fact that there are several different incremental values between before and after the "Shifa Program" intervention was given. The results of the presentation of respondents' dietary compliance before being given the intervention showed the highest value of 64.3% and after being given the intervention it became 92.9%.

Communication technology can assist in providing care and support to improve health status. The SMS broadcast is given because it is expected to change the respondent's behavior in a more positive direction by forming a memory or sensory memory by recording information from stimuli received from the environment through the help of the five senses. If the stimuli in the environment are ignored, not seen, not smelled, or not heard by the senses, then memory will not be formed.

Conversely, if the stimulus is noticed and then recorded by the senses, it will be forwarded to the nervous system and will become a short-term memory (Nimas, 2017).

Any repeated short-term memory will enter into long-term memory. Likewise with sending SMS broadcasts, which aim to recall short-term memories in the form of information about dietary compliance that has been provided by previous health workers. so that respondents are obedient in implementing the diabetes mellitus diet.

## CONCLUSION

The highest level of compliance before intervention was the treatment group with 18 respondents (64.3%) being obedient, and the control group having the most 21 respondents (75%) being obedient. The highest level of compliance after the intervention was the treatment group with 26 respondents (92.2%) obedient, and the control group with 16 respondents (57.1%). There is an effect of the use of "Shifa Program" on patients with type 2 diabetes mellitus at DustiraCimahi Hospital with a value of  $p = 0.009$  ( $p < 0.05$ ).

This "Shifa Program" can be used as a reference for institutions, especially regarding IT-based health promotion, which can then be used as a reference in making pocket books or guidebooks on the management of Diabetes Mellitus diet, and can be used as a material in learning nursing care in patients with type 2 DM and diabetes mellitus. source of reference for lecturers and students in developing nursing knowledge and as input for health promotion programs in efforts to prevent degenerative diseases.

## References

- , (2012). Data Statistik Jumlah Penderita Diabetes Di Dunia Versi Who <http://www.indodiabetes.com/data-statistik-jumlah-penderita-diabetes-di-dunia-versiwho.html>. diakses pada 15 desember 2016
- Brunner & Suddarth's. (2010). Textbook of Medical Surgical Nursing. Lippincot : William & Wilkins.
- Huether, E Sue.,McCance, L Kathryn., Brashers, L Valentina., Rote, S Neal. (2019). Buku Ajar Patofisiologi Edisi Indonesia Keenam oleh Djoko Wahono Soeatmadji, Retty Ratnawati & Hidayat Sujuti. Singapore : Elseiver
- Lestari, Deti Dwi. 2015. Pengaruh Pendidikan Kesehatan Dan Sms Reminder Terhadap Kepatuhan Ibu Hamil Dalam Mengonsumsi Tablet Besi Di Wilayah Kerja Puskesmas
- Mubarak, Iqbal Wahit. (2011). Promosi Kesehatan Untuk Kebidanan. Jakarta : Salemba Medika
- Negara, C. K. (2017). Post Amputation Response And

Coping Of Diabetes Mellitus Patient In Ulin General Hospital Banjarmasin. *Jurnal Ilmu Keperawatan: Journal of Nursing Science*, 5(2), 114-129.

- Notoatmodjo, Soekidjo. (2018). Metodologi Penelitian Kesehatan. Jakarta : Rineka Cipta
- PERKENI. (2015). Pengelolaan dan Pencegahan Diabetes Mellitus Tipe 2 di Indonesia. Jakarta : Perkeni
- Pisangan Tahun 2015. <http://www.DETIDWILESTARI-FKIK.pdf>. diakses pada 15 januari 2016.
- Pudiastuti, Ratna Dewi. (2013). Penyakit-penyakit Mematikan. Yogyakarta : Nuha Medika
- Riskesdas 2018, Riset Kesehatan Dasar (Riskesdas). (2018). Badan Penelitian Dan Pengembangan Kesehatan Kementrian RI tahun 2018.
- Sugiyono . (2014). Statistik Untuk Penelitian. Bandung : Alfabeta
- , (2017). Metode Penelitian Kuantitatif, Kualitatif, dan R&D. Bandung : Alfabeta
- Suyono,dkk. 2009. Penatalaksanaan diabetes melitus terpadu FKUI: Jakarta
- Waspadji, Sarwono., Sukardji, Kartini., Octarina, Meida. (2009). Pedoman Diet Diabetes Mellitus Edisi Kedua. Jakarta : Fakultas Kedokteran Universitas Indonesia