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Correlation of health literacy and self care management toward people with type 2 diabetes mellitus in Indonesia

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ABSTRAK

Health literacy is considered as one of the influencing factors to management of self-care toward people with type 2 Diabetes Mellitus. *American Diabetes Association* stated that complications of type 2 diabetes mellitus tend to increase even get worse due to the inability to manage the disease independently. This study aimed to understand the correlation of health literacy and the management of self-care in the Health Centers in Makassar City. Measurements using the HLS-Q16 instrument for health literacy and diabetes self-management questionnaire (DSMQ) for self-care management. Data was tested statistically with *Fisher's test*. The results showed an adequate level of health literacy with 71 respondents and a low level of self-care management with 74 respondents from 126 respondents and there was a correlation of health literacy and self-care (p-value = 0.004). This finding can be additional information material to design programs and training that support the improvement

Kata-kata kunci: *Health literacy, Self care, management,* Type 2 Diabetes mellitus

ABSTRACT

Health literacy is considered one of the influencing factors to self-care management in people with type 2 Diabetes Mellitus. American Diabetes Association stated that complications in people with type 2 diabetes mellitus tend to increase and get worse due to the inability to manage the disease independently. This study aimed to understand the correlation of health literacy and the management of self-care in the Health Centers in Makassar City. Measurements using the HLS-Q16 instrument for health literacy and diabetes self-management questionnaire (DSMQ) for self-care management. Data was analyzed by using fisher's exact test. The results showed an adequate level of health literacy with 71 respondents and a low level of self-care management with 74 respondents from 126 respondents and there was a relationship between health literacy and self-care management with p-value = 0.004 <0.05. These findings can be additional information material to design programs and training that support the improvement

Keywords: *Health literacy, Self care, Management, Type 2 Diabetes mellitus*

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INTRODUCTION

Diabetes is a chronic disease that affects almost 463 million individuals worldwide, and the prevalence is estimated to increase to 700 million individuals by 2045 [9]. In reports from 130 countries in 2013, around 382 million people suffer from diabetes and it is estimated to increase to 592 million by 2035[7].

In Indonesia, data obtained from the Indonesian Endocrine Association showed that in 2015 there were 9.1 million people with diabetes mellitus, so it ranks 5th most people with diabetes mellitus [13]. Meanwhile, in South Sulawesi, especially in Makassar City, there were 4406 new people with diabetes mellitus from 46 Health Centers in Makassar City. From the data above, serious efforts are needed in dealing with diabetes because it is an incurable disease though it can be controlled and can induce problems and other disease disorders such as an increase in body mass index, uncontrolled glycemic levels, cardiovascular, retinopathy, foot and kidney complications. [24].

Although medical innovations continue to improve the quality of diabetes mellitus care, the patient's role is indispensable in managing their disease at home, workplace, and community. In this case, self-management is necessary for treating the disease. Self-care is one of the treatments to obtain adequate glycemic control [16]. The components contained in self-management are blood glucose, diet, physical activity, and health care.

In optimally implementing the diabetes mellitus component, patients must apply knowledge in making decisions. Where the success in program to controlling the chronic disease belongs to the personal capability to visit, know, access information and medical treatment in deciding of health care, is defined as Health Literacy.[1].

Data on the level of health literacy in Indonesia is currently limited, several studies have been conducted which describe the low level of health literacy of patients with chronic diseases and pregnant women in Indonesia [6,17,20]. The low level of patient health literacy leads to poor management of the patient's disease, such as diabetes. It increases the chronic disease rate by 47% of the total disease burden, and health literacy plays an essential role in chronic disease management [8]. Other impacts of low health literacy are delayed diagnosis of disease, poor self-care capability, enhancement utilization of critical medical treatment, high hospitalization rates, increased incidence of various diseases, and ultimately doubled mortality rate [4, 10]. The results of this study are expected to be a source of information to the Health Centers to increase the level of health literacy and self-care management in Diabetes Mellitus patients to minimize complications and pay more attention to teaching methods, should be easy to understand, diverse, and specific for patients related to education, culture, gender, and age. In addition, it is necessary to conduct a learning sessions for caregiver and provide education service individually and with familyas strategy to support health literacy to achieve proper self-care management.

Table 1. Distribution of respondent characteristics in Health Centers of Makassar City

Variable	n	%
Gender:		
Male	43	34,1
Female	83	65,9
Age:		
Middle age (45-59)	91	72,2
Early Elderly (60-74)	31	24,6
Late Elderly (75)	4	3,2
Educational level:		
Not completed in primary school	14	11,1
Finished elementary school	19	15,1
Junior high school	30	23,8
Senior High School	44	34,39
College	19	15,1
Occupation:		
Unemployed	60	47,6
Farmer	6	4,8
Entrepreneur	45	35,7
Private Employees	6	4,8
Civil Servant	9	7,1
Length of time suffering from DM		
< 5 Years	47	37,3
> 5 Years	79	62,7

METHOD

The study design used was descriptive-analytic with a cross-sectional approach. All people with type 2 diabetes mellitus who visited the health services among July to October 2021 at the Tamalanrea Public Health Center in Makassar City was set as population. The number of samples in this research was 126 respondents using a non-random sampling technique, namely purposive sampling. The data were processed and analyzed with descriptive analysis stages to show the description and using Fisher's test statistical test in bivariate analysis to understand the connection of health literacy and the self-care management in type 2 diabetics. Data will be presented in the form of tables and descriptions.

The instrument used in this research was the HLS-Q16 for health literacy which contains 16 question items with several subdomains in it, which are four questions to seek health information, six questions to understand health information, three questions to assess health information, and three questions to apply health information, while the instrument of the diabetes self-management questionnaire (DSMQ) was used to measure respondents' management of self-care was with 16 questions with several subdomains, which are five questions for blood glucose, four questions for diet, three questions for physical activity, three questions for health treatment and one question for respondent's total self-care [12,15,18].

RESULTS AND DISCUSSION

Characteristics of Respondents

Characteristics of the respondents generally can be seen in Table 1. It is known that there are more female respondents (65.9%) in the age of middle age (72.2%). For the latest education level, some respondents have a high level of education, namely high school with 34.39%, however, there are still respondents with low educational background, who did not finished primary school were 11.1% and finished elementary school were 15.1%. The majority of respondents who do not work are 47.6%, and those who work as entrepreneurs are 35.7%, and most of the respondents suffer from diabetes for more than five years as much as 62.7%.

Level of health literacy and self care management

The distribution of respondents based on the level of health literacy and management of self-care of type 2 diabetes mellitus patients at the Public Health Center of Tamalanrea of Makassar City is in table 2 showed the respondents' health literacy was in the sufficient or good category with 56.3% and self-care management of the respondents was in the inadequate category with 58.7%.

According to the data in table 2, it was known that 55 respondents had inadequate health literacy while 71 respondents were sufficient. The high level of health literacy in the respondents, judging from the characteristics of the respondents in this survey, we found that the average respondent had a high level of education in middle school and college. With their high level of education, the respondents have adequate literacy skills in several cases, such as reading, writing, understanding information, and accessing good information. As in the research carried out (Sorensen et al., 2012; Svendsen et al., 2020) stated that education is one indicator that affects adequate health literacy, where respondents also said that they were able to understand the information they received related to their health, both from health workers and from the media [21,22]. Meanwhile, in self-care, it was found that 52 respondents had high self-care management, while 74 respondents had low self-care

Table 2. Respondents distribution according to management level of health literacy and self-care of type 2 diabetics at the Tamalanrea Public Health Center of Makassar City

Variable	Sufficient		Inadequate	
	n	%	n	%
Health literacy	71	56,3	55	43,7
Self care management	52	41,3	74	58,7

management. Respondents' bad self-care management can be resulted by some factors, among others are acceptance, support and self-motivation from family [2,3,5,14]. As stated in the research (Choi et al., 2014) motivation could also be a determining factor because the longer a person is sick and does not feel recovered from his illness, the less motivation for self-care. Good family support has a positive impact on self-care management behavior. Family support is another family assistance to provide physical and psychological comfort to people in stressful situations [5,14,23]. Some respondents also said that they tend to forget to take their medicine and tend to skip physical activity when their children/husbands do not remind them

LIMITATION

The limitation of this research is that the questions in the instrument used are closed questions so that they are not able to explore further data such as the reasons and opinions of respondents on the answers given.

RESEARCH ETHICS

The implementation of this research has fulfilled the ethical principles of health research and this research has passed the ethical test at the Nani Hasanuddin School of Health Makassar research ethics committee no 027a/STIKES-NH/KEPK/XII/2021.

CONFLICT OF INTEREST

No conflict of interest was found in this study.

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CONCLUSION

It was found that there was a correlation of health literacy and management of self-care in people with type 2 diabetes mellitus in the Health Centers of Makassar City, but from the level of management of self-care, there were still respondents who had poor self-care management, therefore, apart from adequate health literacy, motivation and family support are required in improving self-care management. Thus, nurses are advised to hold educative sessions for caregivers and provide educative services individually and with family as strategy to support health literacy to achieve good management of self-care of the patients.

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