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## RESEARCH ARTICLE

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# The Relationship of Diet Knowledge and Type 2 Diabetes Mellitus Compliance with Long Prolanis Participation

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## ABSTRACT

Knowledge of the diabetes mellitus diet is the first step in improving the adherence of DM patients to diet. The adherence of DM patients in running a diet is the main key to the stability of the health condition of DM patients. Knowing the relationship between nutritional knowledge and dietary compliance with type 2 DM with the length of participation of prolanis at the Blue Health Center, Bone Regency. Observational research with cross sectional approach. Measurement of nutritional knowledge using a questionnaire, measuring dietary compliance using a 24-hour recall form, and measuring the length of participation in prolanis using absenteeism during counseling. Data were analyzed by Chi Square test. Chi Square test, the p value is 0.595, meaning  $p > 0.05$ , there is no relationship between nutritional knowledge and participation in prolanis. There is no relationship between nutritional knowledge of type 2 DM patients with length of participation in prolanis, but there is a relationship between type 2 DM dietary compliance with length of treatment respondents are more active in doing prolanis activities, nutritional knowledge, and dietary compliance.

**Keywords:** diabetes mellitus type 2; nutrition knowledge; diet compliance; prolanis

## INTRODUCTION

### Background

The Chronic Disease Management Program (Prolanis) is a health care system that adopts a proactive approach whose implementation involves participants, health institutions and the Social Security Administering Body (BPJS Kesehatan) for chronic disease patients. The purpose of holding this Prolanis event is to motivate prolanis participants to excel a more optimal quality of life with indicator presence 75% participant visit FKTP (First Level Health Facility). <sup>(1)</sup> Amount DM sufferers in Indonesia showed a downward trend from 2.1% in 2013 to 1.5% in 2018. <sup>(2)</sup> Compared to 2013, the prevalence of DM based on doctor's diagnosis in the population aged 15 years increased to 2% according to Riskesdas 2018. The prevalence of DM in South Sulawesi was 1.6% in 2013 and increased to 1.8% in 2018. <sup>(2)</sup>

Data on the Achievement of Minimum Service Standards in the Health Sector in 2019 in Bone Regency, the number of DM patients served was 6,264 people and DM patients registered as members of the 2019 prolanis at the Blue Health Center of Bone Regency as many as 30 people. <sup>(3)</sup> Diabetes mellitus is a chronic disease that cannot be completely cured but can be controlled. DM sufferers need continuous care in order to improve their quality of life, one of which is through promotion and prevention of BPJS. prolanis have six activity to achieve target It is consultation health, group education, participants prolanis, SMS gate, Home visit, and activity club (gymnastics). <sup>(4)</sup> Knowledge diet DM is step beginning in improving obedience DM patient related pattern eat. DM patient compliance in the working on diet is the main key stability. condition health patient DM. <sup>(5)</sup>

The low levels of knowledge will affect the wrong eating habits leading to obesity, which ultimately leads to an increase in blood glucose levels. However, this study has not shown compliance of DM patients to the diet provided. <sup>(6)</sup>

Dietary compliance is wrong one stabilization factor sugar level blood Become normal and prevent complications. Aspects that influence somebody not obey diet DM is lack of knowledge fight disease DM, trust, and believe to disease DM <sup>(7)</sup>, not obey patient in doing treatment DM want give impact negative which very large cover increase cost health and complications DM. <sup>(8)</sup>

The purpose of this study was to determine the relationship between nutritional knowledge and adherence to a type 2 diabetes diet with the length of participation in prolanis at the Blue Health Center, Bone Regency.

**METHODS**

The type of research used was observational with a cross sectional research design. The researcher wanted to analyze the relationship between nutritional knowledge and dietary compliance with type 2 diabetes mellitus with the duration of Prolanis membership at the Blue Health Center, Bone Regency.

The population in this study was all patients with type 2 DM who were registered as prolanis members in 2019 at the Bone Regency Blue Health Center as many as 30 people. The method of taking respondents used was non probability sampling with saturated sampling method (census) where the entire population becomes respondent, all members of prolanis as many as 30 people.

Nutrition knowledge level data measured by questionnaires with 20 items of interrogative questions. Assessment was obtained by giving score, 1 score for the correct answer and 0 score for the wrong answer. Assessment data on dietary compliance of patients in running a diet by calculating the level of energy consumption as measured by the 24-hour recall method for 3 days is not sequential. The data analysis used was Chi square test.

**RESULTS**

Table 1. The relationship between membership length and nutritional knowledge

Prolanis membership length	Nutritional knowledge						Total		p-value
	Healthy		Enough		Not enough		n	%	
	f	%	f	%	f	%			
Active	14	46.7	1	3.3	0	0	15	50	0.595
Not active	13	43.3	1	3.3	1	3.3	15	50	
Total	27	90	2	6.7	1	3.3	30	100	

Table 1 shows that there was no relationship between nutritional knowledge and length of participation in prolanis. The results of statistical testing using the Chi Square test show that the p value of 0.595 means  $p > 0.05$  so there was no significant relationship.

Table 2. The relationship between membership length and dietary compliance

Prolanis membership length	Dietary compliance				Total		p-value
	Obey		Not obey		n	%	
	f	%	f	%			
Active	11	36.7	4	13.3	15	50	0.028
Not active	5	16.7	10	33.3	15	50	
Total	16	53.3	14	46.7	30	100	

Table 2 shows that there was a relationship between dietary compliance with type 2 diabetes and the length of participation in prolanis at the Blue Health Center, Bone Regency. The results of statistical tests using the Chi Square test show that the p-value of 0.028 means that  $p < 0.05$  there was a significant relationship.

**DISCUSSION**

**Relationship between Nutritional Knowledge and Prolanis Membership Length**

National Health since January 2014, in accordance with Law Number 40 of 2014 concerning the National Social Security System, first level health facilities (community health center) as the front line that can carry out prolanis through collaboration with BPJS to provide guidance for people with chronic diseases.

The participation of prolanis participants at the Puskesmas can be seen from the participants taking part in routine activities carried out at the Puskesmas every month. The prolanis activity in this study was counseling about DM which was held once a month in the fourth week. The aim of prolanis is to encourage participants with chronic diseases to achieve a better quality of life and prevent complications. The results of the analysis showed that there is no relationship between nutritional knowledge and length of participation in prolanis.

The results of this study are not in line with the research of Puspita & Rakhma (2018) which showed a significant relationship between prolanis participation and the level of nutritional knowledge of people with diabetes mellitus at Gilingan Health Center Surakarta. <sup>(9)</sup>

This study did not succeed in proving a relationship between nutritional knowledge and length of participation in prolanis, because it is in accordance with the fact that each activity in the prolanis program provides various materials and does not focus on DM diet, so the understanding about DM disease is still lacking. Another factor that caused the absence of a relationship between nutritional knowledge and the length of participation of prolanis because active and inactive prolanis participants were almost comparable.

### **Relationship between Diet Compliance and Prolanis Membership Length**

This study proves that there is a relationship between DM dietary compliance with the duration of prolanis membership. The results of this study are not in line with the research (Puspita & Rakhma, 2018), showed that respondents who classified as active in prolanis activities while respondents who do not comply are classified as inactive in prolanis activities.

Diet is the main therapy of DM patients, so every patient must have a positive attitude towards the DM diet, so that both acute and chronic complications do not occur. Quality of life can be maintained and to avoid complications from DM, every patient must carry out a healthy lifestyle, namely a DM diet and regular exercise. Another factor that also affects dietary compliance is nutritional counseling, where in this study counseling is carried out regularly once a month according to the study. <sup>(10)</sup>

The results of this study are not in line with the research of Ariana et al. (2020) suggested that prolanis participation can improve the quality of life of DM patients. Chronic disease patients who received education and consultation showed better adherence, lower complications and better quality of life. <sup>(11)</sup>

### **CONCLUSION**

The conclusion of this study is that there is no significant relationship between nutritional knowledge of type 2 diabetes mellitus patients and the length of participation in prolanis. at the Blue Health Center, Bone Regency, but there was a relationship between dietary compliance with type 2 diabetes mellitus and the length of participation of prolanis at the Blue Health Center in Bone Regency.

Suggestions given to respondents to be more active in prolanis activities, nutritional knowledge, and dietary compliance, and for health center to increase the frequency of counseling and when returning home respondents should be given leaflets.

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