EMPOWERING ADOLESCENTS IN PREVENTING THE RISK OF DIABETES MELLITUS

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Abstract

Diabetes mellitus is an increasing global health problem, including among adolescents. This study aims to identify adolescent empowerment in health promotion of diabetes mellitus prevention at SMK NUSA Poncokusumo, Malang Regency. The design of this study used Quasi Experiment with two group pretest-posttest with control group design. The data collection instrument used a questionnaire sheet and an observation sheet. Data analysis used the Mann-Whitney test with a significance level of 5 percent to show significant results. The results of the Mann-Whitney test comparing the treatment group and the control group obtained a significance value of 0.000 (p <0.05) indicating a significant difference in the level of knowledge after being given treatment. Thus, the treatment given to the treatment group proved effective in increasing students' knowledge levels. While the results of the Mann-Whitney test comparing the treatment group and the control group obtained a significance value of 0.000 (p <0.05) indicating a significant difference in skills after being given treatment. Thus, the treatment given to the treatment group proved effective in improving students' skills. Youth Empowerment can improve knowledge and skills in Health Promotion and Prevention of Diabetes Mellitus Risk for Students at SMK NUSA Poncokusumo, Malang Regency.

Keywords: Empowerment, adolescents, prevention, diabetes mellitus.

1. INTRODUCTION

Diabetes mellitus, a chronic disease characterized by elevated blood sugar levels, has become a serious global health problem. This disease not only affects the quality of life of sufferers but also causes a significant economic burden on the health system. The IDF diabetes atlas reports that the global prevalence of diabetes in people aged 20-79 years in 2021 is estimated to be 10.5% (536.6 million people), increasing to 12.2% (783.2 million) in 2045. The prevalence of diabetes is similar between men and women and is highest in those aged 75-79 years. The prevalence (2021) is estimated to be higher in urban (12.1%) than rural (8.3%), and in high-income countries (11.1%) compared to low-income countries (5.5. Currently, there are a total of 1,645 patients with diabetes in 13 cities, including Padang, Yogyakarta, Solo, Bandung, Jakarta, Medan, Palembang, Semarang, Malang, Makassar, Denpasar, Manado, and Surabaya. Of this number, around 46.23% of people with diabetes are in the 10-14 year age range, while another 31.05% are in the 5-9 year range, 19% are 0-4 years old, and the remaining around 3% are over 14 years old (IDF, 2022).

The increasing prevalence of diabetes at a young age, including adolescents, is a major concern because it can cause serious long-term complications. Therefore, early prevention efforts are a crucial step in overcoming this problem. Adolescents are an age group that is vulnerable to various risk factors for diabetes mellitus, such as unhealthy diet, lack of physical activity, and obesity. Unhealthy lifestyle changes during adolescence can increase the risk of insulin resistance and glucose intolerance, which are the first steps towards type 2 diabetes mellitus. Thus, empowering adolescents in adopting a healthy lifestyle is key in efforts to prevent diabetes (Indonesia Nutrition Bulletin, 2022)

Empowering adolescents in the context of preventing diabetes mellitus is an effort to equip adolescents with the knowledge, skills, and motivation needed so that they can take active action in maintaining their health and preventing diabetes. This involves the process of providing accurate information, developing life skills, and creating an environment that supports a healthy lifestyle. This empowerment can be done through various means, such as health education, life skills training, and

social support. The main goal of empowering adolescents is to equip them with the knowledge and skills needed to make healthy and responsible life choices (Jurnal Ilmu Kesehatan, 2021)

Although information on preventing diabetes mellitus is widely available, there is still a gap between knowledge and action in adolescents. Many adolescents know about the risks of diabetes, but do not always apply this knowledge in their daily lives. This shows that efforts to empower adolescents not only require the delivery of information, but must also involve a more comprehensive approach. This study aims to explore the effectiveness of adolescent empowerment programs in improving knowledge and skills in health promotion for preventing diabetes mellitus. By understanding the factors that influence the success of empowerment programs, it is hoped that more effective interventions can be developed to prevent diabetes mellitus in adolescents.

2. METHODOLOGY

The research method used Quasi Experiment design with two group pretest-posttest with control group design. The number of research subjects was 60 students divided into 2 groups, namely the treatment and control groups. The data collection instrument used a questionnaire sheet to measure the level of knowledge and an observation sheet to measure skills. This study used univariate and bivariate statistical tests. Univariate testing was carried out using the frequency distribution test and bivariate testing was carried out using the Mann-Whitney test. The level of significance used was 5 percent to show significant results.

3. RESULTS

3.1 General Data of SMK NUSA Poncokusumo Students as Community Empowerment Participants

Table 1. *Description of age of community empowerment participants*

Characteristics	Total (n = 60)	Treatment (n = 30)	Control (n = 30)
Age			
16 years	19 (31.7%)	11 (36.7%)	8 (26.7%)
17 years	34 (56.7%)	13 (43.3%)	21 (70.0%)
18 years	7 (11.7%)	6 (20.0%)	1 (3.3%)
Gender			
Male	15 (25.0%)	8 (26.7%)	7 (23.3%)
Female	45 (75.0%)	22 (73.3%)	23 (76.7%)

The results of the general data description based on age obtained 34 people or 56.7 percent of participants aged 17 years, 19 people or 31.7 percent of participants aged 16 years, and 7 people or 11.7 percent of participants aged 18 years. Furthermore, the general data description based on gender obtained 15 people or 25.0 percent male participants and 45 people or 75.0 percent female participants.

3.2 B. Effect of Treatment on Students' Knowledge Level and Skill Level

Table 2. *Participants' knowledge level before being given treatment*

Knowledge	Treatment (n = 30)	Control (n = 30)	p
Before treat ment			0.317
Very good	0 (0.0%)	0 (0.0%)	
Good	0 (0.0%)	0 (0.0%)	
Fair	0 (0.0%)	1 (3.3%)	
Poor	30 (100.0%)	29 (96.7%)	
After treatment			0.000
Very good	9 (30.0%)	0 (0.0%)	
Good	16 (53.3%)	2 (6.7%)	
Fair	4 (13.3%)	9 (30.0%)	
Poor	1 (3.3%)	19 (63.3%)	

The results of the Mann-Whitney test comparing the treatment group and the control group obtained a significance value (p) of 0.317 (p > 0.05) indicating that there was no significant difference in the level of knowledge before being given treatment. Furthermore, a significance value of 0.000 (p < 0.05) was obtained, indicating that there was a significant difference in the level of knowledge after being given treatment. Thus, the treatment given to the treatment group was proven effective in increasing the level of knowledge of the participants.

Table 3. *Partic ipants' skill level before being given treatment*

Skill Level	Treatment (n = 30)	Control (n = 30)	p
Before Treatment			1.000
Very good	0 (0.0%)	0 (0.0%)	
Good	0 (0.0%)	0 (0.0%)	
Fair	0 (0.0%)	0 (0.0%)	
Poor	30 (100.0%)	30 (100.0%)	
After Treatment			0.000
Very good	9 (30.0%)	0 (0.0%)	
Good	20 (66.7%)	3 (10.0%)	
Fair	1 (3.3%)	10 (33.3%)	
Poor	0 (0.0%)	17 (56.7%)	

The results of the Mann-Whitney test comparing the treatment group and the control group obtained a significance value (p) of 1,000 (p > 0.05) indicating that there was no significant difference in the skill level before treatment was given. Furthermore, a significance value of 0.000 (p < 0.05) was obtained, indicating that there was a significant difference in the level of knowledge after treatment was given.

Thus, the treatment given to the treatment group was proven effective in increasing the skill level of participants.

4. CONCLUSIONS

Youth empowerment is a long-term investment in public health. By providing youth with the right knowledge and skills, we can help them live healthier and more productive lives. Adolescent empowerment is effective in health promotion and prevention of diabetes mellitus risk.

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