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# THE EFFECTIVITY OF DIABETIC SELF MANAGEMENT ORIENTED TO THE FAMILY AT EFFORT TO INCREASE SELF EFFICACY, SELF MANAGEMENT, GLICAEMIC CONTROL AND OBEDIENCE TO THERAPEUTIC PROGRAM OF TYPE 2 DIABETIC

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**ABSTRACT**

The purpose of the study is to analyze the effectivity of Diabetic self management program oriented to the family at effort to increase self efficacy, self management, glicaemic control and obedience to the Diabetic therapeutic program. The design of the study in quasy experiment with pre test and post test design with control group. Based on data release by Center of Health Distric Pasar Minggu South Jakarta, which took as the respondent of intervention and control group, using interview and questionnaire method. Analysis of data statistic has shown that there is a significant different on health condition between the intervention and control group. On the control group has score 1, 937 (4,002 – 2,065) meanwhile the score of intervention group 4,312(-15.056 to -10.744) with p-value 0,000 <0,05. The result of test different mean from diabetic self management has score of intervention group 7,62 ( 5.15- 2.77) with p-value 0.000 <0,05. Meanwhile in the control group the score are 7.56 (5.18 - 12.74). Score of influence of self management upon stage of obedience in control group 1,324 (-3,062 to -1,738) meanwhile on the intervention group 1,852(-7,226 to -5374). The score of influence of self efficacy upon the obedience in control group 0,906 (-1,120 to -0,214) meanwhile in intervention group 2.889 (-8,611 to - 5,722) with p-value 0.000. on the influence of knowledge upon the obedience the score in control group is 0,928 (1.564 – 0,636) with p-value 0,000 < 0,05. Meanwhile in the intervention group the score is 2,043 (7,055 – 5,012).

**Keywords:** Diabetic self management, self efficacy, self management, glicaemic control, obedience upon therapeutic

## INTRODUCTION

Diabetes Mellitus is a chronic metabolic disease characterized by increased blood glucose levels that cause serious damage to the heart, blood vessels, eyes, kidneys and nerves. The most common type is type 2 diabetes, which generally occurs in adults, occurs when the body experiences insulin resistance or does not produce enough insulin. In the last three decades, the prevalence of type 2 diabetes has increased dramatically in countries of all income levels (WHO, 2019).

Basic Health Research (Riskesdas) 2018 shows that the prevalence of Non-Communicable Diseases (PTM) has increased quite worryingly compared to the 2013 Riskesdas. Based on blood sugar checks, people with DM increased from 6.9 percent in the 2013 Riskesdas to 8.5 percent in 2018. Meanwhile, according to the 2015 Perkeni consensus, the prevalence of DM was 10.9 percent in 2018. Based on gender, the prevalence of DM in 2018 showed that women were higher. of 1.8% compared to men of 1.2%. The prevalence of urban residents is greater at 1.5% compared to rural residents at 1.0%. Based on age group, the highest prevalence was 6.3% at the age of 55 - 64 years (Indonesian Ministry of Health, 2018).

The limited availability of health care personnel to provide support to patients living in rural communities provides recognition of the important role family members can play in caring for individuals suffering from chronic pain. As a result, in the last decades, health self-management programs have gradually included family members being involved in providing health care (Rosland et al., 2010). Numerous studies have shown that health care strategies involving family members can improve self-efficacy, knowledge about the condition, and self-care skills in individuals with chronic conditions such as Type 2 DM (Baig et al., 2015). A systematic review and meta-analysis of 52 randomized controlled trials found how such programs can improve patients' perceptions of physical and mental health(Hartmann et al., 2010); while other narrative systemic reviews discuss how these interventions can improve glycemic control in individuals with Type 2 DM (Armour et al., 2005).

However, the beneficial effects of family-oriented health care programs show inconsistent patient health outcomes (Armour et al., 2005). Some studies have shown how these programs can improve patients' self-efficacy and their overall diabetes management, while others have found that these interventions do not improve self-management in glycemia control (García-Huidobro et al., 2011).

General purpose this research is mAnalyzing the effectiveness of a family-oriented diabetes self-management program in efforts to increase self-efficacy, self-management, glycemic control and adherence to the therapy program for type 2 DM clients. The specific objectives of this research are 1). Analyze the individual characteristics of type 2 DM clients in the intervention group and control group. 2). Analyzing self-efficacy, self-management, glycemic control and compliance of type 2 DM clients before implementing a family-oriented self-management program in the intervention group and control group.

## RESEARCH METHODS

The research design used in this study was a quasi-experimental design using a pre-test and post-test design with a control group which aimed to see the effectiveness

of a family-oriented self-management program in efforts to increase self-efficacy and compliance with type 2 DM client therapy programs.

Based on data obtained from the Pasar Minggu District Health Center as an intervention group, after that home visits were carried out to carry out the Diabetes Self Management program. Previously, a pre-test of self-efficacy and adherence to the type 2 DM client therapy program was carried out in the intervention group and control group using the interview method using a questionnaire. Next, a diabetes self-management program intervention was carried out with a family approach for 4 weeks.

In the first week, researchers carried out a diabetes self-management education intervention for patients and their families using booklets or modules. Researchers provided Diabetes self-management education about choosing footwear, preventing and managing foot injuries to respondents and their families. In the second week, researchers carried out follow-up interventions to respondents by telephone to families by identifying behaviors related to diabetes self-care that had been carried out and reminding patients and families about the diabetes self-care educational material that had been provided. Week III and Week IV researchers visited face to face with patients and families to carry out monitoring and evaluation related to diabetes self-care that had been carried out.

## RESULTS AND DISCUSSION

Distribution of respondent characteristics based on age, gender and education in East Cilandak Village, Pasar Minggu District, South Jakarta.

**Table 1. Characteristics of Respondents**

| Variable | Category | F | % |
|---|---|---|---|
| **Age** | Young | 22 | 36.7 |
| | Old | 38 | 63.3 |
| **Gender** | Man | 15 | 25 |
| | Woman | 45 | 75 |
| **Education** | Low | 56 | 93.3 |
| | Tall | 4 | 6,7 |

The results of the analysis in the table above show that the majority of older people are the largest respondents, namely 38 respondents (63.3%), and young people are 22 respondents (36.7%). Distribution based on gender, the majority of respondents were female, 45 respondents (75%), 15 respondents (25%) were male. Distribution is based on average education with the lowest category education being 56 respondents (93.3%), and high category education being 4 respondents (6.7%).

1. Comparison of practices **prevention of diabetic foot** before and after treatment

   Table 2 Differences in health conditions of type 2 DM clients before and after treatment between the control group and the intervention group East Cilandak Village, Pasar Minggu District, South Jakarta (n = 60)

| Health Conditions of Type 2 Diabetes Mellitus Clients | Mean ± SD | *p-value* |
|---|---|---|
| Pre Control – Post Control | 2,065±4,002 | 0,000 |
| Pre Intervention – Post Intervention | -15,056±-10,744 | |

*p-value*< 0.05 based on paired t-test

Based on the results of the analysis, the p-value is 0.000 <0.05, it can be concluded that there is a difference in the health condition of Type 2 Diabetes Mellitus clients before and after the control and intervention groups. In the control group there was a change of 4.002 – 2.065 (∧ 1.937) while in the intervention group there was a change of-15,056 -10,744 (∧ 4,312)

2. Effects of intervention programs **diabetes self-management** which is oriented to the health condition of type 2 DM clients

Table 3. Results of tests of differences in self-management scores for diabetics with type 2 DM after intervention in the control group and the intervention group East Cilandak Village, Pasar Minggu District, South Jakarta. In the intervention group there was a change in the mean score from 5.15 to 12.77 (∧ 7.62) while in the control group the change in the mean score was from 5.18 to 12.74. (∧ 7.56)

| Group | Mean ± SD | *p-value* |
|---|---|---|
| Intervention | -12,777±-5.156 | 0,000 |
| Control | -12,747±-5,187 | 0,000 |

The results of the test above show a p-value of 0.000 < 0.05 which states that there is a relationship between the health condition of Type 2 Diabetes Mellitus clients before and after in the control and intervention groups. Or in other words Ha is accepted and Ho is rejected

3. Self-management of compliance levels

Table 4. Differences in self-management in the intervention group and the control group on the level of compliance in patients suffering from type 2 DM

| Health Conditions of Type 2 Diabetes Mellitus Clients | Mean ± SD | *p-value* |
|---|---|---|
| Pre Control – Post Control | 1,738±3,062 | 0,000 |
| Pre Intervention – Post Intervention | -7,226±-5,374 | |

*p-value*< 0.05 based on paired t-test

Based on the table above, the p-value for Diabetic self-management is 0.000 <0.05, so it can be concluded that there is a significant difference in the health condition of Type 2 Diabetes Mellitus clients before and after the control and intervention groups. In the control group there was a change of 3,062-1,738 (∧ 1,324) while in the intervention group it was 7,226 - 5374 (∧ 1,852)

4. The influence of self-efficacy on the level of compliance

Table 5: The influence of self-efficacy on the level of compliance of type 2 DM sufferers before and after

treatment between the control group and the intervention group.

| Group | Mean ± SD | *p-value* |
|---|---|---|
| Pre Control – Post Control | 0.214±1,120 | 0.005 |
| Pre Intervention – Post Intervention | -8,611±-5,722 | 0,000 |

*p-value*< 0.05 based on paired t-test

The results of statistical tests on the influence of self-efficacy on the level of compliance in the control group were 1.120 - 0.214 (∧ 0.906) showing a p-value of 0.005, while in the intervention group it was 8.611 - 5.722 (∧ 2.889) which showed a p-value of 0.000 so it can be concluded that in the intervention there is a more significant influence between self-efficacy on the level of compliance in type 2 DM sufferers in Cilandak Timur Village, Pasar Minggu District Area, South Jakarta

5. The influence of knowledge on the level of compliance

Table 6. Effect of knowledge on the level of compliance of type 2 DM sufferers before and after treatment between the control group and the intervention group.

| Health Conditions of Type 2 Diabetes Mellitus Clients | Mean ± SD | *p-value* |
|---|---|---|
| Pre Control – Post Control | 0.636±1,564 | 0,000 |
| Pre Intervention – Post Intervention | -7,055±-5,012 | |

*p-value*< 0.05 based on paired t-test

The results of statistical tests on the effect of knowledge on the level of compliance show that in the control group there are differences from1,564 – 0.636 (∧0.928)The p-value is 0.000 < 0.05, while in the intervention group there was a change of 7.055 – 5.012 (∧ 2.043), so it can be concluded that there is a relationship between knowledge and the level of compliance in Type 2 Diabetes Mellitus clients before and after in the control and intervention groups.

**Discussion**

Based on the results of univariate analysis of data from 60 respondents, it is known that 75% are female, 25% are male, with the old age category being 63.3%, young age 26.3% in the age range 30 to 76 years and the category low education 93.3%, higher education 5.7% in the range from no school to Bachelor's degree.

As for data on the health conditions of clients in the intervention group, the change was higher with a mean score of 10.74 to 15.05 (∧ 4.31) compared to the control group from a score of 2.06 to 4.00 (∧ 1.94) showing a significant difference with p -value < 0.05 with the client's health indicators being blood pressure, blood sugar levels, no diabetic ulcers.

Based on the results of the Bivariate analysis, it can be seen that the effect of Diabetic self-management intervention on the health condition of clients in the intervention group showed a change from a mean score of 5.15 to 12.77 (∧ 7.62) compared to a change in the control group from a mean score of 5.18 to 12.74 (∧ 7.62). ∧ 7.56) by showing a significant difference with a p-value of 0.000.

The influence of self-efficacy on the level of compliance in self-management in the intervention group showed an increase

in the mean score from 5.72 to 8.61 (∧ 2.89) with a p-value of 0.000, while in the control group the increase in the mean score was 0.21 to 1.12 with (∧ 0, 91) p-value 0.005, so it can be concluded that in the intervention group there was a more significant effect.

The influence of knowledge on the level of compliance of type 2 DM sufferers in carrying out Diabetic self-management in the intervention group showed a change in the mean from 5.02 to 7.05 and a change in the mean score from 0.63 to 1.56 with a p-value of 0.000, so it can be concluded that there is a relationship between knowledge with the level of compliance.

## CONCLUSION

Based on the results of the analysis, it can be concluded that the level of knowledge plays a significant role in type 2 diabetes mellitus patients' compliance with their self-management. Good knowledge about the disease is positively associated with adherence to medication use, self-management, and patient quality of life. Apart from that, the diabetes self-management intervention also had a significant effect on the client's health condition, with the intervention group showing greater changes than the control group. This shows the importance of education and appropriate interventions in the management of type 2 diabetes mellitus to improve patient compliance and quality of life.

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