THE PROCEEDING
OF THE 10th INTERNATIONAL NURSING CONFERENCE

INTERNATIONAL NURSING CONFERENCE

"Tropical Health and Coastal Region Development"

Mercure Hotel Surabaya
East Java, Indonesia
April 6th - 7th 2019

Faculty of Nursing
UNIVERSITAS AIRLANGGA
Excellence with Morality

In Collaboration with:

UNIVERSITY OF MALAYA

The Proceeding of 10th International Nursing Conference
Theme : Tropical Health Coastal Region Development.

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The Proceeding of 10th International Nursing Conference: Tropical Health Coastal Region Development.
1790 halaman, ukuran 21 x 29,7 cm.

ISBN:
9 786237 522300

PREFACE

Praise the presence of Allah SWT, for his mercy so that Faculty of Nursing Universitas Airlangga can produced the proceedings of the 10th International Nursing Conference with the theme "Tropical Health Coastal Region Development". This conference was held on 6-7 April 2019 in Surabaya

This proceeding book contains a number of research articles and literature reviews in the fields of nursing and health. The article is the work of health workers and practitioners outside of health who have an interest in health. The article in this proceeding was presented at the 10th International Nursing Conference event at the Grand Mercure Hotel Surabaya

Hopefully this proceeding book can provide benefits for the development of science, policy, methods of intervention and technology, especially in the field of nursing. In addition, this proceeding is expected to also be a reference for the development of Indonesia's health sector. Finally, we thank all those who have played a role and participated in this international conference. We apologize for the things that are not pleasing. We will wait for constructive suggestions and criticism for the sake of the perfection of this proceeding books.

Surabaya, Desember 2019

Chairman of 10th INC

GREETING FROM THE CHAIR PERSON OF THE 10th INC 2019

Assalamu'alaikum Warahmatullahi Wabarakatuh

The honorable Rector of Universitas Airlangga
The honorable Dean of Faculty of Nursing, Universitas Airlangga
The honorable Head of Co-Host Institutions
Distinguished Speakers and all Participants

Praise the presence of Allah SWT, for his mercy so that Faculty of Nursing Universitas Airlangga can organized The The 10th International Nursing Conference 2019 "Tropical Health Coastal Region Development". Welcome to Surabaya, The City of Heroes Indonesia. On behalf of the Organizing Committee. I would like to extend our warmest welcome to you at The 10th INC 2019. This annual conference is the tenth event after the ninth has been successfully conducted in 2018.

This conference is organized by Faculty of Nursing Universitas Airlangga with cooperation of three nursing institutions throughout the nation. These institutions including, Universitas Islam Sultan Agung Semarang, STIKES Pemkab Jombang, and Universitas Muhammadiyah Surabaya. Once more aims to elaborate with the aforementioned institutions and international universities through holding an international nursing conference. The international universities include: La Trobe University (Australia), University of Malaya (Malaysia), National Cheng Kung University (Taiwan) and Edinburgh University (Scotland).

The conference aims to provide a forum for researchers, lecturers, nurses, students both from clinical and educational setting, regional and overseas area. We have accepted 333 abstracts for oral and poster presentation coming from different universities from many countries. Moreover, I would like to announce that Proceeding of this International Nursing Conference will be submitted to SCOPUS. The selected papers will be submit at Journal Ners and online ISSN proceeding.

The committee extent very kind thank to all participants for the success of the conference. Finally the success of this conference lies not only in the quality of papers but also on the dedicated team work of the organizing and scientific committee. Finally, I would like to thanks to all speakers, participants, and sponsors from Jaya Kelana Abadi CV so that this conference can be held successfully. Please enjoy the international conference, I hope we all have a wonderful time at the conference. Thank you.

Wassalamu 'alaikum Warahmatullohi Wabarokatuh

Dr. Abu Bakar, M.Kep., Ns., Sp.Kep.MB
The 10th INC 2019 Chair Person

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PEER GROUP SUPPORT AND HEALTH EDUCATION ON SELF CARE BEHAVIOUR IN DIABETES MELLITUS PATIENTS

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ABSTRACT

Diabetes mellitus is a metabolic disease that requires the complexity of therapy so that it requires self-management to control blood sugar. This study aims to determine of Peer Group Support (PGS) and health education on self-care behaviour in type II Diabetes Mellitus (DM). This research was a quantitative study with a quasi-experimental design, used two group design with pretest and posttest design. The sample was 28 respondents using total sampling method. They were divided into two groups by simple random sampling. The first group attended PGS for 4 meetings, the second group was only given counselling about DM for 4x. Measurement of Self care Behaviour using SDSCA (Summary Diabetes Self Care Activities), was carried out 2x pre and post-intervention. The results showed that there were differences in Self-care Behaviour in diabetes between peer group support and health education groups (p = 0.009). PGS is influential on the management of type 2 DM patients (p
= 0,000). It is expected that the health centre to form a special cadre for DM patients and for further research to use a larger sample with stress management modification for sufferers.

Keywords: diabetes mellitus, health education, peer group support, self care behaviour

1. Introduction

Diabetes is one of the most common chronic disorders that affect large numbers of human at all social and economic level, greatly increases the risk of cardiovascular diseases, and is the primary cause of death [1]. Patients with diabetes should be able to adapt to dietary changes, physical activity, medication and to manage stress. Patients are required to interact effectively with health care systems, family members and friends to provide support in managing the disease [2]. Peer support interventions attempting to address metabolic, treatment adherence, behavioral, knowledge and psychosocial outcomes have shown varying success[3].

Factors that affect the high blood sugar levels in patients are age, lack of physical activity and less understanding of the disease so that blood sugar levels can be controlled[4]. Diabetes mellitus affected almost 150 million people worldwide, and in the year 2025, the number of diabetic people is estimated to increase until 300 million. Meanwhile, other researchers in other studies estimated that in the year 2030 the number of diabetics will rise up to 366 million people from 171 million people in 2000[5]and it is predicted that the developing countries have their contribution which that

70 % of diabetic people are living there [6]. Indonesia is one of the developing countries, where the prevalence of diabetes mellitus is also increasing rapidly [7].

Diabetes as a chronic disease with the most complications requires independence from patients in managing their illness. If the patient is not able to independently consciously from himself then the possibility of disease is difficult to control[8]. One of the main aspects of diabetes care is self-care because self-care can improve patient health, reduce medical expenses and complications. Self-care describes the behavior of individuals who are carried out consciously and self-focused[9]. Diabetes self-care includes diet, medication adherence, regular exercise, monitoring of blood glucose levels and foot care[10].

Health education and support by groups of people with chronic diseases or peer group support (PGS) can reduce health behavior problems, reduce depression and contribute to improving the management of independent diabetes. The success of PGS is related to the sense of togetherness and sharing of life experiences with fellow DM people. Without the PGS, people with DM will feel alone, feeling that there is nothing they can share with their illness and no one understands themselves because only he feels that[11]. Support in peer provided through participation in groups can help patients manage their disease, especially managing diabetes self-care. This study aims to determine of *Peer Group Support* (PGS) and health education on the self -care behaviors in type II Diabetes Mellitus (DM).

2. Research Methods

This research study was quasi-experimental with a pre- and post-test design that was conducted in a developing Public Health Center in South Sulawesi, Indonesia, from July to December 2018.

According to the number of patients in the public health center where the sample calculation was conducted, 94 participants should be included to achieve 90% power, with a 1-sided level of 0.01 and a 10% - 15% anticipated drop-out rate [12]. The patients with diabetes type 2 were totally sampled; 18 participants were allocated to the PGS group and 18 participants were allocated to the Health Education (HE) group. For the final outcome analysis, we excluded six participants on the basis of the participants' request (n = 5) and due to incomplete returned instruments (n = 3), thereby leaving 14 participants for both groups (Fig. 1). The inclusion criteria were type 2 diabetes patients for at least one year, who had the commitment to take part in the complete study, and those who were fully alert and capable of reading and writing. The patients with ulcers decubitus and who were over 65 years of age were excluded because these conditions can disrupt their activities.

The respondent’s characteristic data served as an instrument for obtaining an overview of the factors related to self-care behavior. The data, which includes age and phone number, was collected using a participant characteristic questionnaire. The self-care behavior (SCB) scores was measured pre- and post-intervention for both groups using the Expanded Version of the Summary Diabetes Self Care Activities (SDSCA).

The SDSCA is a standard self-report scale to assess diabetes self-management. Ten items assessed the frequencies of specific self-management activities during the previous week; an additional three items assessed smoking. The respondents marked the numbers of days (0–7) on which the indicated behaviors were performed. The item scores could be averaged to the five subscales. All scale scores ranged from 0 to 7 with higher scores suggesting better self-management. The SDSCA has shown adequate reliability and validity in English [13]as well as for the German

samples[14]. In this study, the reliability coefficients were observed as follows (Cronbach's α; stratified by scale): general diet 0.89, exercise 0.74, blood-glucose testing 0.78 and foot care 0.72[13,15]. These tools were also translated into Bahasa Indonesia with a Cronbach's alpha coefficient of 0.79, which indicates high consistency.

The researchers recruited patients with type 2 diabetes according to the inclusion criteria and then allocated them either to the PGS group or to the health education group. Recruitment and intervention for the PGS group was conducted first until the desirable sample quote was achieved, followed by the recruitment and intervention of the participants for the health education group. This sampling method was applied to avoid data contamination and to ensure that the sample size was appropriate for the power analysis.

The aim and procedure of the study was explained to the patients and those who agreed to participate signed an informed consent form. The researcher then explained to the participants how to fill in the PGS and health education information. Furthermore, the group that taught PGS before the intervention were given the PGS guidelines. In the PGS group, there were two peer supporters that were diabetic patients who had been able to control the disease.

The peer supporters attended two-morning training sessions which were conducted by the research team. The sessions focused on the basics of type 2 diabetes and the issues relating to working within groups and confidentiality. Peer support meetings were held in the general practice premises at a convenient time for the practice staff, peer supporters and participants. The practices offered various daytime or early evening sessions, depending on the patients' preference. There was also a "frequently asked questions" (FAQs) system. That is, at the end of each session, the group fed back questions to the research team who compiled written answers based on the feedback from all groups. The FAQs from all groups were combined and sent back to the groups for the next session. Both interventions were given four times each week. The researchers measured the outcomes two times, namely before the intervention (pre-test), and four times after the interventions (post-test).

The data entry and statistical analysis was performed using the SPSS 21.0 statistical software package. The data was presented using descriptive and analytical statistics. Chi-square and independent t-test were used for the homogeneity test of the participants' characteristics between groups[16] in which a p value > 0.05 was considered to be similar between the group characteristics. The data obtained was analyzed using a paired t-test and independent t-test with a significant level of $\propto < 0.005$.

3. Results

Eighteen participants were in the PGS group and 18 participants were in the health education group. Four participants in the PGS group and health education group dropped out during the intervention (Figure 1). The characteristics of the participants at baseline have been presented in Table 1, showing that the two arms were balanced and similar statistically.

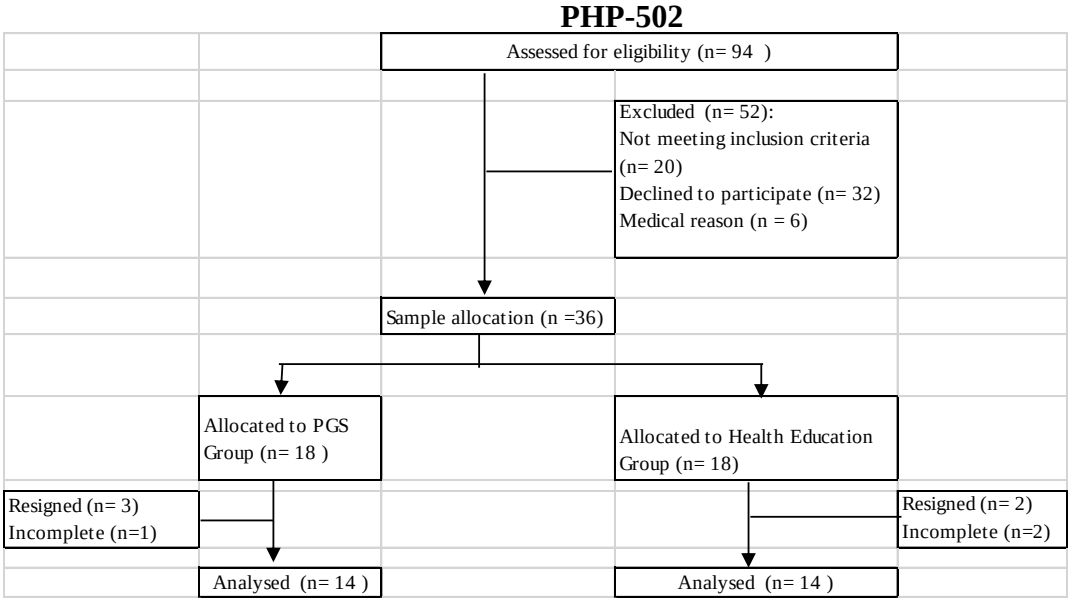

Figure 1. Study flow.

Table 1. The characteristics of the participants (n = 28).

Variables	PGS		Health Education		P Value
	n	%	n	%	
Age in years (Mean, SD)	50.53	6.32	50.08	7.13	0.106
Sex					0.564
Male	2	7.1	5	17.9	
Female	12	42.9	9	32.1	
Level of education					1.000
High School	8	28.6	9	32.1	
University	6	21.4	5	17.9	
Employment					1.000
Employer	4	14.3	6	21.4	
Employee	3	10.7	2	7.1	
Unemployed	7	25.0	6	21.4	
BMI categories					0.875
Underweight	1	3.6	4	14.3	
Normal	10	35.7	10	35.7	
Overweight	2	7.1	0	0.0	
Obesity	1	3.6	0	0.0	
Duration of illness					0.986
1-3 years	3	10.7	1	3.6	
> 3 years	11	39.3	13	46.4	
Marital status					1.000
Single	3	10.7	2	7.1	
Married	9	32.1	10	35.7	
Widow/widower	2	7.1	2	7.1	

Note: Statistically significant $\alpha \leq 0.05$ using an independent t-test & Chi-square test

Table 2. SCB score between the PGS group and health education group (*Mean of total score* ± *SD*).

Time	PGS	Health Education	Mean difference (95% CI)	*t* value	*P* value
Pre-test	52.40 ± 0.64	52.54 ± 0.61	0.14	0.674	0.698
Post-test	64.14 ± 0.89	60.71 ± 0.82	3.98	7.221	0.001

Table 2 shows the description of the differences in self-care behavior. A significant difference was found between the PGS group and the HE group with a mean difference of 3.98 (99% CI, P = 0.001). These results indicate that PGS more effectively improved the self-care behavior of the patients 4 times after the intervention.

Table 3. SCB score differences based on the SCB domains before and after the completion of Peer Group Support and health education (*Mean* ± *SD*).

SCB Domain	Peer Group Support (n=14)	Health Education (n=14)	*t* value	*P* value
General diet	3.02 ± 0.54	2.51 ± 0.56	3.556	0.042
Exercise	4.12 ± 0.67	2.99 ± 0.14	5.211	0.001
Blood-glucose testing	1.61 ± 0.28	1.02 ± 0.21	1.428	0.322
Foot care	3.08 ± 0.33	2.01 ± 0.36	3.209	0.021

Note: Statistically significant at an $\alpha < 0.005$ with Independent t-test.

Table 3 shows the measurement of the SCB score difference based on the SCB domains. The scores for the exercise domains were the highest.

4. Discussion

The majority of the participants in all groups were female with an age of 50 years and over. The duration of illness in all groups was almost equal. This indicates that this problem might be more prevalent among females than males. The youngest participant was 43 years, which is much younger than in the Western Urban China population[17]where the youngest diabetic patient was 60 years old (range of 60 – 79 years). The participants' education levels were almost equal in the two groups as the most appropriate statement to compare the impact of the intervention strategy among the two groups[14,18]. Most of the study participants (68 %) in the two groups were married. This situation is expected, as their family can support and motivate the participants in doing the self-care behavior which will lead to increase the patients' adherence to following the program.

Before conducting the study, the respondent's commitment was asking. Therefore, among the two groups, there are eight respondents has dropped out for the intervention. The reason that the respondents could not continue the intervention was because there were families who had died and who had to go out of the area for 2 weeks. There were also those who had dropped out because they followed their husband who had suddenly migrated outside of the area.

Based on the results, the support from both the groups and their peers is more effective at increasing the self-care behavior in the PGS group that received it four times. This was better than those who only received health education. The researchers concluded that PGS significantly increases the self-care behavior in patients with type 2 diabetes mellitus. A study conducted in China found

that peer support in primary care can enhance knowledge, improve self-efficacy, and decrease BMI, systolic blood pressure, diastolic blood pressure and both fasting and 2-hour post-prandial blood glucose [19]. Besides that, peer support also reported that it can improve the clinical outcomes that include the HbA1C, cholesterol concentration, systolic blood pressure and wellbeing score [15]. Another study with another patient found that with breast cancer, peer support can provide a higher quality of life compared to others [18].

The highest score in the SCB level based on domain in this study before both of the interventions was observed as being focused on exercise. Exercise is an easy thing for the respondent to do. The respondents only need to jog or walk every morning for about 30 minutes and without spending much money. In addition, there are a lot of programs available from public health centers that are near to their home. They have taken part in joint exercises every week.

Both PGS and health education are effective at improving self-care behavior. Besides that, both of them can enhance the knowledge of the participants. This is supported by the previous study in that knowledge can be improved through training and education and the educational model involving the active role of the participants. This results in improving their knowledge significantly and steadily as a basis for their behavior changing [20].

In the PGS group, there were 2 volunteers serving as support for the respondents who still poor at diabetes self-care. With the presence of volunteers who were able to manage their disease well, they are expected to be able to have a vicarious experience. Vicarious experience is a way to improve the management of independent diabetes from the experience of success that has been shown by others. It is a role in peer group support that is used as modeling for carrying out an action. Modeling is generally weaker than personal success when carrying out actions (enactive attainment). With a model that can be imitated and supported, the patient finds it easier and is more motivated to follow the behavior of the model.The success of PGS is related to the sense of togetherness and the sharing of life experiences with others [4]. With the existence of PGS, the patients can feel a sense of togetherness with the others who have the same condition as themselves. They can learn of the solutions to the problems that they experience so then their self-care behavior can improve.

This study has several limitations and shortcomings, such as the implementation of PGS, which is one group of PGS for as many as 14 participants. The groups should have been made where there were eight or nine people in one group. This happened because of the limited number of participants and teams of nutritionist and pharmacists from the developing public health center. In anticipation of these limitations, the researchers provided the PGS implementation and taught it directly in order to assist the participants with filling out the self-care behavior questionnaires and the list of the respondent's problems. This was to allow them to discuss it with the teams and volunteers. Additionally, the researchers presented two volunteers to facilitate the 14 respondents so then they could accommodate the questions and discussions from the respondents.

5. Conclusions

PGS is more effective at improving the self-care behavior in patients with diabetes mellitus than health education. The results of this research can be used as a reference in the treatment of diabetes self-management. This is because PGS is a social treatment that is easily performed by nurses, family, health educators and patients. Therefore, PGS can be used as a preferable standard procedure. This research can be continued with a larger sample and over a longer period of time than

in the present study.

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