

## **IMPROVING THE CAPACITY OF ADULT AGGREGATE THROUGH THE DIABETES SIGNS AND SYMPTOMS MANAGEMENT (MANDALA DM) IN SRENGSENG SAWAH**

**Rusdianingseh**

Faculty of Nursing and Midwifery  
Nahdlatul Ulama University Surabaya  
Email : rusdia@unusa.ac.id

### **Abstract**

This aim of this final assignment is provide an overview of the application of signs and symptoms management program of diabetes mellitus (Mandala DM) as a form of community nursing intervention in adults aggregate with DM. The Mandala DM program applied as nursing intervention strategy to enhance the activity and independence of adult with diabetes, their families and communities through the Self Help Group (SHG). Mandala DM program applied the integration of management theory, community as partner, family centered nursing, and preceed proceed models. The results showed that an increased in knowledge, skills, attitude and perception about DM, and decreased in blood sugar levels of 10-20 mg / dl. The improved health of adult diabetes is also indicated by the 10 families assisted. This study recommends that the Department of Health, community health centers, community nurses and community, especially the adults aggregate to use this program to control the DM.

**Key words:** DM, Self Help Group, adult aggregate

### **Introduction**

Diabetes mellitus is one of the chronic diseases with the number of patients who continue to increase and cause health problems. World Health Organization Survey (2014) that currently worldwide there are 382 million people with diabetes mellitus, with the mortality rate reached 5.1 million, which means every 6 seconds there is one patient died.

Diabetes mellitus patients in Indonesia until 2015 reached 9.1 million people with a prevalence rate of 6.67% for adult population and this figure is predicted to continue increasing beyond 21.3 million in the year 2030 and the composition is more at a young age and productive age. The country of Indonesia currently ranks fourth in the number of people with diabetes in the world after India, China and the United States are predicted to last until 2030 (Kemenkes RI, 2013).

Basic Health Research states that the prevalence of diabetes mellitus in adult age is 9.6% in DKI Jakarta (Risksedas, 2013). In Jagakarsa sub-district, South Jakarta, diabetes mellitus surveillance was ranked number three

after coronary heart disease and hypertension, with total diabetes mellitus 1,240 people. Based on a survey in October 2015, in Srengseng Sawah village there are 70 adult diabetes mellitus spread in 11 RW. The highest number of DM patients are in RW 01 as many as 35 adults (Survey of University of Indonesia application and residency students, 2015).

Diabetes mellitus is one of the chronic diseases that many suffered from adulthood to the elderly. A person is said to have diabetes mellitus if the fasting blood glucose concentration is more than or equal to 126 mg/dL, or blood glucose 2 hours after meals more than or equal to 200 mg/dL, or more than 200 mg/dL at the time of examination of blood glucose levels (Soegondo, Soewondo, & Subekti, 2011).

Lifestyle changes and increased economic status are said to increase the risk of type 2 diabetes mellitus, such as, unhealthy diet, consumption of sugar, fat and salt high, rarely exercise or lazy to move and less physical activity, all can cause the risk of obesity that is the entry point of diabetes mellitus. Healthy lifestyle is very effective and

cheap to control the risk of diabetes mellitus and reduce the risk of complications (Anggina, 2010).

Waspadji (2011) mentioned that complications of type 2 diabetes mellitus in the long term can cause macrovascular, microvascular, neuropathy and susceptible to infection. Macrovascular complications are complications involving large arterial blood vessels leading to coronary heart disease, cerebrovascular disease, stroke and peripheral vascular. Microvascular complications are complications involving smaller blood vessels including retinopathy (visual impairment), nephropathy (a disorder of the kidneys) and diabetic neuropathy (neuropathy).

The complexity of health problems that arise both to individuals, families and communities, puts people with type 2 diabetes mellitus as a vulnerable population. The vulnerable population is a group that has a high risk of health problems.

Based on the above explanation, it is important to do optimal management of type 2 diabetes mellitus to reduce the incidence of complications. Perkumpulan Endokrinologi Indonesia/ Indonesia Endocrinology Association (Perkeni) (2015) states that the goal of diabetes mellitus management is to improve the quality of life of people with diabetes mellitus with lifestyle changes. Diabetes mellitus is a chronic disease that requires sustained, even lifelong management to prevent further complications. Perkeni (2015) states that there are four pillars of diabetes mellitus management, namely education, medical nutrition therapy, physical exercise, and pharmacological intervention.

Based on the results of the survey of students application and residency nursing community of University of Indonesia in October 2015, the authors are interested in conducting activities in the program Mandala DM (Manajemen Tanda dan Gejala DM / Diabetes Mellitus Signs and Symptom Management) in Srengseng Sawah, especially in RW 01 as a bag of diabetes mellitus disease in adult aggregate. The result of the study of 65 respondents through questionnaires found that aggregate adult diabetes mellitus in Srengseng Sawah had less knowledge about diabetes mellitus disease 47,8%, which have negative attitude about diabetes mellitus treatment that is equal to 45,1%, bad skill 50%

And has not shown a good perception of 51.9%.

The results of these assessments form the basis for the formulation of programs so that the behavior and lifestyle of people with diabetes mellitus and people at risk can have better behavior. Promotion, protective and preventive programs should be implemented. Community nurses manage the practice of nursing care and care based on various theories and models. The theory and model used in this innovation program is an integration of nursing management theories and models, community partners, family center nursing, and preceed-proceed models. The integration of the theory and model is used in the nursing process starting from risk factor assessment and nursing management, identifying nursing diagnoses, making interventions to achieve expected outcomes, implementing nursing, and evaluating the effectiveness of implementation (Miller, 2012).

The innovation program implemented is sign and symptom management with approach through group process that is Self Help Group (SHG) established especially in RW 01 Srengseng Sawah village. Management of signs and symptoms of DM (Mandala DM) is an intervention activity that starts from the conceptual model, which means based on the concept of diabetes mellitus management. The concept that diabetes mellitus management includes self-care management with healthy lifestyle, sociopsychological (coping strategies, stress management and family/social support), and pharmacological therapy (Garcia, 2005).

Mandala DM interventions are applied through group processes. The group process is a community nursing strategy that can be done in the community in this case, the group process through the establishment of SHG for diabetics. SHG is a group that helps each other, or as a group that provides support for each group member. Members of this group cling to the view that people with problems can help each other with greater empathy and more openness (Keliat, 2008).

Mandala DM intervention applied is a nursing intervention strategy that is devoted to improving the activity of adult aggregate with diabetes mellitus, family and community through SHG with companion cadre of Pos Pembinaan Terpadu Penyakit Tidak menular

(Posbindu PTM)/ Integrated Post of Communicable Diseases. Community nurses act as educators, promoters and facilitators in controlling diabetes mellitus to improve adult aggregate health status with diabetes mellitus.

Based on the description, the author will describe Mandala DM in adult aggregate with diabetes mellitus in Srengseng Sawah sub-district Jagakarsa, South Jakarta.

### Method

Implementation of Mandala DM activity using semi-research approach with simple descriptive design. The sample size is 30 adults. Inclusion criteria aged 20 years to 59 years, have blood sugar levels of more than 200 mg/dl, not impaired consciousness, living with family and residing in the area RW 01 Srengseng Sawah village jagakarsa South Jakarta. The instrument used is a questionnaire about knowledge, skills, attitudes and perceptions of diabetes mellitus.

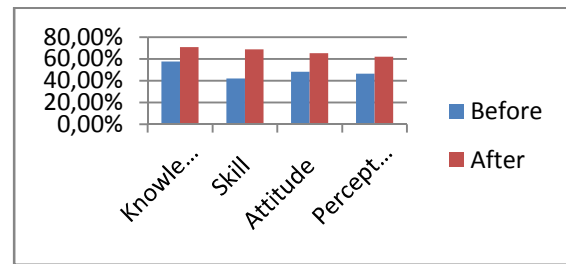
Implementation of this activity include stages of nursing care consisting of assessment, formulation of nursing diagnoses, intervention and implementation, and evaluation of the results of activities. Implementation of Mandala DM program activities conducted for 8 months in RW 01 Srengseng Sawah

### Results

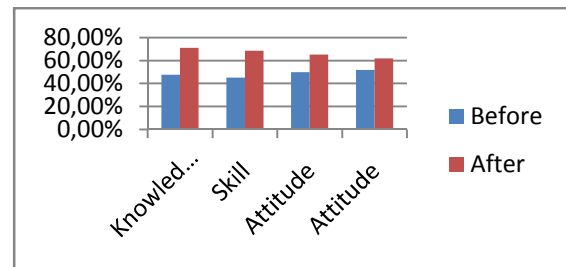
Implementation of Mandala DM program through education and health demonstration includes education about diabetes mellitus disease, demonstration of DM balanced diet management and physical exercise and blood glucose screening in adult aggregate with diabetes mellitus. Mandala DM program activities through the formation of support help group and posbindu PTM in RW 01 Srengseng Sawah.

The result of the implementation of Mandala DM program activity is behavioral change in self help group members and community of Srengseng Sawah, decreasing of blood sugar level in adult aggregate with diabetes mellitus, and formation of posbindu PTM in RW 01 Srengseng Sawah village. Here's a behavior change diagram:

**Figure 1.** Distribution of Frequency of Behavior Self help group based on Knowledge, Skills, Attitudes and Perceptions of Diabetes Mellitus Before and After Nursing Intervention



**Figure 2.** Distribution of Frequency of Community Behavior based on Knowledge, Skills, Attitudes and Perceptions of Diabetes Mellitus Before and After Community Nursing Intervention



Based on the picture above, there was a significant behavior change after the intervention of Mandala DM. Mandala DM activities are also supported by the formation of posbindu PTM with the active role of his cadres. Cadre of posbindu PTM had previously been given knowledge and skills training regarding 5 tables of posbindu PTM.

Especially in adult aggregate with diabetes mellitus a decrease of blood sugar level after following activity of Mandala DM. The average decline value is 10 - 20 mg / dl. Activity of Mandala DM through self help group runs actively in the first 4 months, then some members do not routinely follow the activities that have been planned.

Mandala DM activities are also applied in family nursing care, by fostering 10 families with adult aggregate of diabetes mellitus. The activity has succeeded in increasing the level of family independence.

### Discussion

Empowering people with diabetes mellitus through self help group is expected to overcome health problems in adult aggregate with diabetes mellitus. According to Ervin (2002) that empowerment plays an important

role in community nursing actions. The forms of empowerment vary among others through negotiation, coordination and explanation or health education to adults aggregate with diabetes mellitus. Promotion and preventive efforts become the main focus. Stanhope and Lancaster (2010) that health education is an effort to provide promotive and preventive services by disseminating information to change healthier behavior. These activities can be done through PTM posbindu.

The preparation and management of health care programs through Posbindu PTM should be in accordance with the needs of the community, in this case adults aggregate with diabetes mellitus. Efforts that can be made to improve the skills and skills of program makers and managers in each level. Health care institutions should improve coordination in the planning, implementing, monitoring and evaluating of health services both across sectors and across programs; Develop communication, information and education (IEC) programs in both print media, electronic media, traditional and interpersonal media; And training related to program creation and management (Hasibuan and Atmadja, 2006).

Aspects of organizing and human resources in nursing service management is done by maximizing existing resources in the community of society, cadres, and various elements of sponsors to improve the health of local communities. High community participation is a tangible form of good organization, so the organization of human resources must be really thought out. Good resource planning will provide benefits to enhance organizational value, maintain excellence, few errors and sustainability of sustainable human resources (Barney, 2011).

Intensive cadre training has increased the knowledge and skills of cadres so that the posbindu PTM can be established. Launching was conducted on 14 April 2016, inaugurated by Head of Jagakarsa Sub-district and attended by Jagakarsa Community Health Center and the surrounding community. Posbindu PTM will be routinely implemented every month.

Increasing the scope of services to the community including adult aggregate diabetes mellitus required the role of cadres as the motor of posbindu PTM program, so that the quality of service can be improved. The organizing function will be optimal with sufficient resource support, so optimally

expected results can be realized (Marquis & Huston, 2006).

Efforts to manage diabetes mellitus especially the application of sign and symptom management program (mandala DM) through self help group which has been formed since October 2015 has not showed significant progress. At the beginning of the formation, members of the self help group actively hold regular meetings to discuss each other about diabetes mellitus, diet, exercise and stress management as well as measurement of blood sugar levels. Their level of knowledge, skills and attitudes towards diabetes mellitus also increased about 20-25% from the previous.

Health education is a learning process in which there is a change towards the better in the individual from not knowing health problems and prevention to know, from not able to overcome health problems to be able to solve health problems (Pender, 2001). Family health education on the issue of diabetes mellitus which includes the concept of diabetes mellitus to the use of health facilities can reduce health problems (Allender, Rector, and Warner, 2014; Maglaya et al., 2009).

Treatment with sign management and symptoms that include diabetes diet, foot care, foot exercises, muscle stretching exercises, and the presence of family and environmental support are essential for the prevention and promotion of adult diabetes mellitus. Family support includes four dimensions of empathy, encouragement, facilities and participation. Families with members with type 2 diabetes mellitus should understand each of these dimensions because they involve perceptions of the existence and accuracy of support (Hensarling, 2009).

The role of the family is as a primary caregiver for family members suffering from type 2 diabetes mellitus related to physical, psychological, spiritual and socioeconomic changes. In this case the family is a major element for people with diabetes mellitus type 2 in treating primarily modify the lifestyle to minimize risk factors. Modification of roles may also be made depending on the role of family members with chronic illness. Healthy family members have internal and external resources so that they can replace tasks and duties that can not be done by sick family members (Friedman, Bowden & Jones, 2010).

Adequate family support for people with chronic diabetes mellitus type 2 will have

a positive impact on the quality of life of patients. Yusra's research (2010) at Fatmawati Hospital Jakarta stated that family support is one of the factors that have strong relation with quality of life of type 2 diabetes mellitus with p value = 0,001 and r = 0,703. While Jin, Dong, Dong and Min (2012) research in Korea has resulted in overall negative impact in people with type 2 diabetes mellitus on their quality of life due to lack of family support.

This community-partner model is very suitable for community care because the assessment is so comprehensive that the data obtained illustrates the adult condition with diabetes mellitus in Srengseng Sawah. The integration of the community-partner model, family centered nursing, and preceed proceed model and nursing management provides a more comprehensive model of assessment that not only studies the community but also the family and management functions of health services. But in the implementation of the assessment, because the assessment points become more than the students experience constraints when conducting the assessment. The number of data and the number of questions that should be filled in the questionnaire made the family reluctant to fill so that students need to conduct assessment through direct interviews.

The activity plan in community nursing is "Management of signs and symptoms of DM (Mandala DM)". The aims and objectives of this intervention are to increase the knowledge of adult and community groups about diabetes mellitus, as well as to raise awareness to control their blood sugar, improve their ability independently to take precautions and treat diabetes mellitus. Planning a good and mature program will facilitate the process of diabetes mellitus. This intervention uses several intervention strategies in community nursing, including: health education, community empowerment and partnerships, family and environmental support, and nursing interventions related to diabetes mellitus management.

Activity planning strategies that have been made aim to improve the health status of diabetes mellitus problem actively and independently. The form of planned activity strategy in the form of health education activity about diabetes mellitus, blood glucose screening, foot exercises, and diabetes mellitus

campaign with leaflet spread and followed by family coaching with adult diabetes mellitus, training and establishment and training of PTM cadres for preparation Routine implementation of posbindu PTM.

### Conclusion

Implementation of the DM Mandala with the integration of the theory Health care management, Community as Partner Model, Preceed-Proceed Model, Family Centered Nursing is effective in nursing care in adult aggregate with diabetes mellitus. This is indicated by:

1. Increased knowledge, skill, and attitude of adult aggregate with diabetes mellitus after application of mandala DM program through self help group;
2. Decrease in blood sugar level in adult aggregate with diabetes mellitus after doing Mandala DM activity;
3. Increasing the independence of the family in the treatment of people with diabetes mellitus;
4. Increasing the knowledge and skills of members of the self-help group in controlling diabetes mellitus;
5. The formation and implementation of postbindu PTM as one of the containers for early detection of cases of non-communicable diseases, including diabetes mellitus;

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