

Case Study Article

THE IMPLEMENTATION OF DIABETIC SELF-MANAGEMENT IN INDONESIA AND TAIWAN HOSPITAL: A CASE STUDY DESIGN

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Abstract

Background:

Population of people with diabetes mellitus (DM) are increasing every year. As a chronic illness, patients with DM needs to practice self-management for life. Adopted the nursing system in other countries that are more advanced in DM care, however the study is still under investigation.

Objectives: primary objective was to analyze the diabetic Self-management among the Indonesian and Taiwan population in Hospital. Secondary was to develop theory-guided and/or evidence-based nursing model in the self-management among diabetic patient with practical issues.

Methods: We used a case study design by discussion across the multi-discipline of health care provider point of view, observation and brief interview session with patient, observe the health care model, learning process of health education between nurse and patient and whole application of the health education, at Veteran Hospital in Taiwan and Manambai Abdulkadir Hospitals in Indonesia.

Results: Education system related to self-management of DM patients have been running and prepared by the Veteran hospital in Taiwan. The health system for diabetes management was called by diabetes shared care. Nurse, nutritionist and doctor have similar opinions about self-management in DM patients in Taiwan but different perspective among health professionals in Indonesia. The process of applying of evidence-based nursing practice and guidelines for providing health education to patients in Veteran Hospital Taiwan was using guidelines from the diabetes federation of China (Taiwan), on the other hand, standard operating procedure in Hospital in Manambai Abdulkadir Hospital, Indonesia, it is due to different policy in each country.

Conclusion: The model of self-management might can be successfully be applied in clinical setting with several strategies by resolve the challenges. Hopefully, this study can be providing valuable information to the health professionals in order to provide the best service for patients with DM.

Keywords: *Diabetes, self-management, model, health education.*

INTRODUCTION

Population of people with diabetes mellitus (DM) are increasing every year. The total of Diabetes Mellitus (DM) patients around the world are 425 million people, which increased 48% rather than each year before. Prediction in 2045, the population will increase until 629 million, (IDF, 2017).

Patients with DM in Indonesia in 2017 were 159 million, this number is increasing 15% of the previous year. Predicted that the number of Indonesian populations who will be suffered of diabetes in 2045 are about 183 million, (IDF, 2017). Appropriate approach is needed by health workers to make patient's burden of the disease can be reduced.

On the other hand, the incidence of diabetes for diabetes in Taiwan remained stable over this 10-year, especially for complications. Amputation due to diabetic ulcer is rarely happens around 5 years ago. The complications that often occur in Taiwan recently in the form of heart and kidney disease due to good healthy behavior, (The Diabetes Association of the R.O.C, 2020). Adopted the nursing system in other countries like Taiwan that are more advanced in DM care.

This study focusses on the topic of "Diabetic self-management among the Indonesian and Taiwan Population". Under the study process, all health professionals in hospitals, implementation of the clinical practice experience successfully strengthens and expands current knowledge and care model about the diabetic self-management among the Indonesian and Taiwan population. Critical analysis about the findings of this study was gained through comparison of the findings between Indonesia and Taiwan hospitals.

The healthcare model related to health issues is the core final target for this practicum course. Through the healthcare model, theory-guided or evidence-based nursing model related to the application of self-management among the Indonesian and Taiwan population had formulated and proposed based upon the advantages or disadvantages of its model for future plan. Comprehensive explanation and

description of clinical practicum's findings will be reported. The aim of the study was to analyze the diabetic self-management among the Indonesian and Taiwan population in Hospital, further to develop theory-guided and/or evidence-based nursing model in the self-management among diabetic patient with practical issues.

METHODS

Learning methods of this study were supervision, discussion, direct interview, observation and evaluation based on learning project plan had obtained during the activity. The study had completed based on the guideline of clinical learning plan at study activation report. The schedule, dates, time, and activities report described as follow:

1. Date

- a. H.L. Manambai Abdulkadir Hospital, January 15th – 22th 2019
- b. Taipei Veteran General Hospital, April 18th – May 02th, 2019

2. Hours

- a. H.L. Manambai Abdulkadir Hospital, total 64 hours
- b. Taipei Veteran General Hospital, total 24 hours

Different setting of hours among two hospitals due to the limited time that can be provided and permitted by two hospitals.

3. Study Activity Report

- a. H.L. Manambai Abdulkadir Hospital
Analyze health-care issues in diabetes mellitus type 2 population, explore the development of knowledge and practice situation regarding diabetes mellitus patient, self-management, factor influences in self-management to the diabetes mellitus type 2 patient, analyze the current care model for self-management in diabetes mellitus patient type 2, analysis of the advantages and disadvantages of the current self-management model, analyze the resources needed to advance the new care model in self-

management for diabetes mellitus type 2 patient, discuss the new care model in self- management for diabetes mellitus type 2 patient with multi disciplines of health givers.

Ten patients who were included in the inclusion criteria were interviewed by using self-management questionnaire, diabetes management, self-efficacy scale, diabetes self-management knowledge and diabetes distress scale. A nurse, nutritionist and doctor were interviewed to obtain the information of self-management implementation.

b. Taipei Veteran General Hospital Schedule

Introduction and observation the health care model as general for self-management among diabetes mellitus patients and health needs among DM patients in Taiwan. Explore the health education system for the Diabetes type 2 patients. Exploring the health care model for the diabetes mellitus patient. Identify the perceive of self-management perspectives and observe how to facilitate self-management in DM patient based upon nurses, doctors and dieticians. Analyze evidence-based nursing practice, health education related to self-management among diabetes mellitus patients. Three of nurses, a nutritionist and a doctor were interviewed to obtain the information of self-management implementation.

Ethical Consideration

This study was approved by hospital with letter reference number 1243/HPL/2019. The participants and health professionals who

elected to participate in this study will be asked to take part in this a case study. All participants will be provided informed consent prior to data collection, after being informed about the nature of the study, the voluntary nature of participation, the right to refuse to participate in the study and to withdraw consent at any time without reprisal, the anticipated benefits and potential risks of the study, and the confidentiality of responses.

RESULTS AND DISCUSSION

H.L. Manambai Abdulkadir Hospital (Indonesia)

The result of a case study at H.L. Manambai Abdulkadir Hospital divided into diabetes mellitus patients' needs of self-management, health education system related self-management, perceive of self-management perspective based upon nurses, doctors, and dieticians, evidence-based nursing practice and health education related to self-management among diabetes mellitus patients as well as how to facilitate self-management to DM patients. The result from direct-observation will also be described as follow:

Diabetes Mellitus Patients' Needs of Self-Management

While in Indonesia, we have conducted a study directly to patients by using questionnaires to identify patients need of self-management. We are able to collect data directly to patients because no barrier language each other's. The results of direct interviews with patients regarding their needs for self-management can be seen in the table and explanation below (table 1).

Table 1. Distribution of respondents by Self-Management, Self-Efficacy, Diabetes Distress and Diabetes Knowledge in the H.L. Manambai Abdulkadir Hospital (Indonesia) on January 15th – 22th 2019 (n = 10).

Variable	N	%	Total
Self-management			10 (100%)
- Quite good	3	30%	
- Medium	1	10%	
- Less	6	60%	
Self-efficacy			10 (100%)
- Quite good	2	20%	
- Medium	3	30%	
- Bad	5	50%	
Diabetes Distress			10 (100%)
- Regimen related distress and emotional burden	7	70%	
- Interpersonal distress	1	10%	
- Physical related distress	2	20%	
Diabetes knowledge			10 (100%)
- Good	3	30%	
- Middle	2	20%	
- Less	3	30%	
- Very less	2	20%	

Sources: Primary Data of Questionnaires, 2019.

The majority of patients' self-management is poor (60%) even though (70%) of patients have been diagnosed with diabetes 2-10 years. Patients were claimed that they often consume a lot of foods containing high glucose, besides that there are some patients using traditional medicine (Chinese medicine) to make their blood glucose always stable. Patients have expectations and hopes that diabetes can be treated like other diseases such as diarrheal diseases, taking medication then recovering immediately. Patients assume that medicine treatment is the best way to be recovery from diabetes, this condition was evidenced by 100% of patients claiming to be routine and never absent when asked by the doctor for always checking their condition

into the hospital to be given medicine of diabetes.

This reality proves that patients are more likely to follow all the advice of health workers by passively for treatment rather than behaving actively in regulating their blood sugar through control diet and exercise. moreover, some of patients were did diet manipulation before their controlled in the hospital. A few days before control, patients have managed their diet and doing routine sports, as a result, when his blood sugar was checked, the blood sugar tend to be good when examined. With this evidence, it can be concluded that the examination of blood sugar in the laboratory has not been the best examination for patients at HL Manambai Abdulkadir Hospital. It would be better if the HbA1c was checked regularly every 3 or 6 months.

Besides being able to record patient management for 3 month ago, HbA1c also can be made a predictor whether the patient has probability suffering other complications or not in the future.

DM patients in hospitals often come for hospitalization due to complications (CKD or ulcus DM). Most of patients entered for hospitalization already in a severe condition as usually because most of them did not know they were sick with DM, suddenly entered the hospital, suddenly the condition was severe, as a result the patient did not know how long there were suffered DM illness. On the other hand, there are some patients who are hospitalized with DM without complications. They already know that them-self has DM but they are so lazy for controlling in healthcare services as routinely. Patients are lazy to go to the hospital and take medication regularly.

50% of patients have bad self-efficacy to be able to do diabetes self-management. This condition is corelated with the patient's knowledge still low relatively. Patients who have good knowledge about diabetes only (30%) then others (70%) are in the range of moderate, bad, until very bad. Patients have expectations that diabetes can be treated like other diseases, taking medication then recovering immediately. Routine activities through nutrition consultations have been done by patients with nutritionist in hospitals. However, with this data, it appears that hospital needed to do additional efforts to overcome this gap. Hospitals need to think about making a community of diabetes patient in hospitals, doing seminars with diabetes community, group discussions and also support groups between DM patients, families, nurses, nutritionists and doctors. Health workers and patients

can work together through discussion to make self-management will success in the future, (Pranata, 2019). Through seminars that are carried out routinely, patients can bring their family who included into diabetes high-risk groups, hopefully, through this activity, increasing the number of DM patients can be reduced to a minimum. Moreover, families have sufficient knowledge to actively help other family members in self-management activity.

70% of patients had distress problem caused by treatment process and routine treatment such as (diet control, take medicine and exercises every day). Furthermore, 70% of patients also suffer of mental burdens due to diabetes. 20% of patients experience difficulties due to decreased physical problems and 10% of patients experience interpersonal problems. The reality that requires of patients to undergo diabetes mellitus therapy all of their life, makes patients so difficult to through their daily lives. Patients have expectations that diabetes can be treated like other diseases, taking medication then recovering immediately.

There are some interesting things from patients in HL Manambai Abdulkadir Hospital, patients who have strong closeness to religion tend to decrease their mental burden and distress of treatment. The patient has strong of sincerity, the patient claimed that there is a great strength beside him (God) which makes the patient always strong for facing their various health conditions, (Pranata & Huang, 2020). Patients always share their complaints through a prayer at least 5 times a day. Therefore, the patient feels stronger, calmer and has confidence that this is only a temporary problem and will end beautifully.

From the data that has been obtained at HL Manambai Abdulkadir hospital, it is clear that the application of self-management is essential to be implemented and programmed. The hospital should have facilitated and prepared a good program for it. Hopefully, from self-management program the risk of complications among patients can be prevented in the future.

Health Education System Related Self-Management

The education system provided by the hospital is still limited to education by health worker such as nurses and doctors by personally on the ward while carrying out other activities like wound care treatment or drug injection to patients. On the other hand, for patients who have to take medication and control in the polyclinic, the education activity by physician is very short because of the large number of queues. If calculated, the amount of time the patient is given education in the polyclinic about 5-10 minutes.

Sometimes, doctors recommend new patients to do consultation with a nutritionist in poly nutrition about a healthy diet for decreasing or controlling their blood sugar at home. Usually, this recommendation is only performed in patients DM with newly diagnosed. Standard of education system for DM patients in hospital followed by operating procedure by hospital which formed by experts or health professionals.

Perceive of Self-Management Perspective Based Upon Nurses, Doctors, and Dieticians

Nurse, nutritionist and doctor have different opinions about self-management in DM patients. Nutritionist argue that a good or a bad

of self-management of patients depends on their active or passively seeking information about what should and should not be done when their suffering diabetes. Meanwhile, it is rarely patients who are active enough to seek information about DM disease through consultation at nutrition poly. Only a few patients who actively ask about their condition to nutritionist. Others, only agreed to the instructions given by the nutritionist.

On the other hand, nurse and doctor believe that patients are able to do self-management properly but they need to be given basic information about DM illness first. Patients need to be given a right understanding of their disease in order to realize that self-management is important. Nurses believe that patients need to be given an understanding if they are not serious practicing good self-management, in the future complications of DM are unavoidable.

Evidence-Based Nursing Practice and Health Education Related to Self-Management Among Diabetes Mellitus Patients as well as How to Facilitate Self-Management to DM Patients.

As general, the application of evidence-based practice regarding patient education and hospital efforts to facilitate self-management of patients has not been well programmed. All efforts to empower patients are still limited to consulting with nurses, doctors and nutritionists by short time relatively. Hospital already provided a special poly for doctors or nutritionists. The transferring of information is by using leaflets or sometimes without using any media.

Taipei veterans General Hospital (Taiwan)

Four aspects of finding were encountered during practicum progress in Taipei veterans

General Hospital. The result of finding described as follow:

Diabetes Mellitus Patients' Needs of Self-Management

To find out the patient's needs of self-management, assessment by directly should be done through interviews or questionnaires to patients. However, due to language limitations, the interview process cannot be carried out.

Although, I cannot do interviews as directly, I can estimate that self-management among DM patients are quite good as generally. I am able to assume like that because during a case study process, I was not found DM patients with severe complications such as ulcer diabetic, kidney disease, heart disease or neuropathy. Patients quite active to ask regarding their condition. Patients active asked about the use of insulin and the medication to nurse educators and what foods should and should not be eaten along with portions at home to nutritionists.

To be able to maintain health conditions and make patients have good quality of life, self-management is very important into the hospital program. Hospitals have shown seriousness effort in facilitating patient for to do self-management.

Health Education System Related Self-Management

Education system related to self-management of DM patients has been running and prepared by the hospital. They call this system by diabetes shared care. This system is a standardized system in the diabetes association and Taiwan government. The Association and the government recognize that prevention of DM complications will be more effective and efficient because it can reduce the

expenditure of country. The description of the system related to diabetes self-management can be seen below:



Picture 1. Health Education System Related Self-Management.

From the framework, patients are the center of service. The service provider team for patients is nurses, doctors, nutritionists, inspectors, heart, eye and kidney specialists. Each patient is advised to do controlling their condition to the hospital at least four times a year or every three months. During the control, the patient will be advised for doing laboratory test such as HbA1C, LDL, HDL, triglycerides and microalbumin. After the results of the laboratory check have been obtained, the patients carry out the consultation to the doctor for getting the medication drug, then going to the nurse educator's and nutritionist rooms to evaluate her self-management while at home. Evaluated of self-management among DM patients includes diet management, using drug, insulin until their exercise.

Good or bad of self-management among patients can be seen from the results of his lab examination. Examination of fundus examination, foot examination and neuropathy examination are carried out regularly every three months. Examination of the renal function, retinopathy, RR interval variation, and sudoscan are carried out regularly every once a year.

If kidney problems, heart problems or other serious complications are found, the patient's

handling is not only carried out by nurse educators, dieticians and doctors of metabolism and endocrine, but also by heart, kidney or eye specialists, depending on the type of complications among DM patients.



Picture 2. ICT Based Smart Healthcare System to Support Self-Management of DM Patients.

In addition to the diabetes share care system, Veteran Hospitals also use ICT Based Smart Healthcare System to Support Self-Management of DM Patients while at home. Patients can take picture each food had been consumed every day, or measure the blood sugar then upload the picture or result on the web system. Every information provided by patients will be integrated with the information system platform in the hospital automatically. Nurse educator, nutritionist and doctor can directly control the patient's condition through this system and can provide advice by online.

Perceive of Self-Management Perspective Based Upon Nurses, Doctors, And Dieticians

Nurse, nutritionist and doctor have similar opinions about self-management in DM patients. All the health workers believe that patients are able to do self-management properly but they need to be given basic information about DM illness first. Patients need to be given a right understanding of their disease in order to realize that self-management is important. Nurses believe that patients

need to be given an understanding if they are not serious practicing good self-management, in the future complications of DM are unavoidable.

Evidence-Based Nursing Practice and Health Education Related to Self-Management Among Diabetes Mellitus Patients as well as How to Facilitate Self-Management to DM Patients.

The process of applying of evidence-based nursing practice and guidelines for providing health education to patients in veterans hospitals was using guidelines from the diabetes federation of China (Taiwan). In general, the guidelines contain examinations, interventions and the types of information provided to DM patients. the guidelines were compiled by experts in Taiwan and are used by veteran hospitals to date. The form of guidebooks and books that support activities to provide education in supporting self-management in hospitals can be seen below:



Picture 3. Guideline from Veteran Hospital to provide information for supporting self-management

Furthermore, education process among DM patients was using two steps. The first step with big group education and the second step with small group education including support group inside.

Big group education

Big group education in DM patients is carried out three or four times a year. The activity is carried out in a big room with 40-60 patients. Health information provision activities are carried out by all expert team in the hospital. The expert team consisted of endocrine and metabolic doctors, DM nurses, nutritionists, eye specialist doctors, neurologist specialists. The education implementation activities are carried out approximately half a day. Each session given duration around 30 minutes with question and answer. The question and answer process usually take quite a long time depending on actively of the participants.

I have not lucky yet to see the activity of education because the education process by hospital to DM patients does not match with my practicum activities. Nevertheless, From the recognition of all health workers in the hospital, this activity was carried out routinely to increase the

knowledge of patients to be able to be independent and having ability to do self-management while at home.

Small group discussion with support group

The small group discussion implementation process includes support groups in it. The discussion involved less than 10 patients. Each participant will share his experience at home related to self-management. The implementation of this activity and its evaluation is carried out three times a month, and the nurse educator takes full account of this activity. Implementation of education process are not only indoors activities but also outdoors activities. outdoor activities are simple exercise which they can do while at home. I have not lucky yet to see the activity of education because the education process by hospital to DM patients does not match with my practicum activities.

The Comparison of Results between H.L. Manambai Abdulkadir Hospital and Taipei Veterans General Hospital

Table 2. The Comparison of Diabetes Mellitus Patients' Needs of Self-Management among Two Hospitals.

H.L. Manambai Abdulkadir Hospital	Taipei Veterans General Hospital
<i>Self-management status</i> The majority of patients' self-management is poor (60%).	<i>Self-management status</i> Data is not assessed due to language barrier
<i>Desire for seeking information and manage them self</i> Patients are more likely to follow all the advice of health workers by passively for treatment rather than behaving actively in regulating their blood sugar through control diet and exercise.	<i>Desire for seeking information and manage them self</i> DM patients in Veteran Hospital quite active to ask regarding their condition. Patients active asked about the use of insulin and the medication to nurse educators and what foods should and should not be eaten along with portions at home to nutritionists.

H.L. Manambai Abdulkadir Hospital	Taipei Veterans General Hospital
<p>The reasoning of patients was coming into the hospital</p> <p>Most of patients entered for hospitalization already in a severe condition (ulcus diabetic) or neuropathy diabeticum as usually because most of them did not know they were sick with DM.</p>	<p>The reasoning of patients were coming into the hospital</p> <p>The prevalence of proteinuria and renal impairment quite big were 29,4% and 15,1% but it due to comorbidities that have been suffered previously. On the other hand, the prevalence lower extremity amputation caused by nontraumatic case was very low.</p>
<p>Self-efficacy status</p> <p>50% of patients have bad self-efficacy to be able to do diabetes self-management.</p>	<p>Self-efficacy status</p> <p>Data is not assessed as detail due to language barrier. However, from the observation process, patients were had confidence for talking about their opinion and medication choices.</p>
<p>Knowledge status</p> <p>Patients who have good knowledge about diabetes only (30%) then others (70%) are in the range of moderate, bad, until very bad</p>	<p>Knowledge status</p> <p>Data is not assessed as detail due to language barrier. But, from the observation process, patients were had confidence for talking about their opinion and medication choices. It seems that the patient already has sufficient knowledge</p>

Table 3. The Comparison of Health Education System among Two Hospitals.

H.L. Manambai Abdulkadir Hospital	Taipei Veterans General Hospital
<p><i>The education system provided by the hospital related to self-management</i></p> <p>The education system provided by the hospital is still limited to education by health professionals such as nurses and doctors by personally on the ward while carrying out other activities like wound care treatment or drug injection to patients. A nutrition poly for patients with DM to discuss about nutrition have been provided.</p>	<p><i>The education system provided by the hospital related to self-management</i></p> <p>Education system related to self-management of DM patients has been running and prepared by the hospital. They call this system by diabetes shared care and ICT based smart care. This system is a standardized system in the diabetes association and Taiwan government.</p>
<p><i>Flow of educational services in hospitals</i></p> <p>After patients who have finished the laboratory check, then patients need to take medication and control in the polyclinic, the education activity by physician is very short there because of the large number of queues.</p>	<p><i>Flow of educational services in hospitals</i></p> <p>After the results of the laboratory check have been obtained, the patients carry out the consultation to the doctor for getting the medication drug, then going to the nurse educator's and nutritionist rooms to evaluate her self-management while at home. Evaluated of self-management among DM patients includes diet management, using drug, insulin until their exercise.</p>
<p><i>Health workers who involved in educational programs related to self-management</i></p> <p>Sometimes, doctors recommend new patients to do consultation with a nutritionist in poly nutrition about a healthy diet for decreasing or controlling their blood</p>	<p><i>Health workers who involved in educational programs related to self-management</i></p> <p>The patient's handling is not only carried out by nurse educators, dieticians and doctors of metabolism and endocrine, but also by heart, kidney or eye specialists,</p>

H.L. Manambai Abdulkadir Hospital	Taipei Veterans General Hospital
sugar at home. Usually, this recommendation is only performed in patients DM with newly diagnosed.	depending on the type of complications among DM patients.
<i>Standard of education system</i> They used standard operating procedure by experts in Manambai Abdulkadir Hospital.	<i>Standard of education system</i> Education system standardized by the diabetes association and Taiwan government.

Table 4. The Comparison of Perceive of Self-Management Perspective Based Upon Nurses, Doctors, And Dieticians among Two Hospitals.

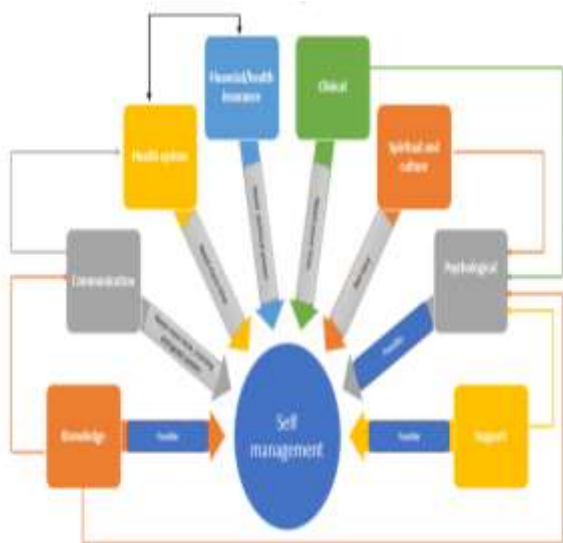
H.L. Manambai Abdulkadir Hospital	Taipei Veterans General Hospital
<i>Opinion by health workers</i> Nutritionist argue that a good or a bad of self-management of patients depends on their active or passively seeking information about what should and should not be done when their suffering diabetes	<i>Opinion by health workers</i> Nurse, nutritionist and doctor have similar opinions about self-management in DM patients.
<i>Health workers paradigm</i> Nurses and doctors believe that patients are able to do self-management properly but they need to be given basic information about DM illness first. Patients need to be given a right understanding of their disease in order to realize that self-management is important.	<i>Health workers paradigm</i> Patients need to be given a right understanding of their disease in order to realize that self-management is important. Nurses believe that patients need to be given an understanding if they are not serious practicing good self-management, in the future complications of DM are unavoidable.

Table 5. The Comparison of the Evidence-Based Nursing Practice and Health Education Related to Self-Management Among Diabetes Mellitus Patients as well as How to Facilitate Self-Management to DM Patients among Two Hospitals.

H.L. Manambai Abdulkadir Hospital	Taipei Veterans General Hospital
<i>Evidence-based nursing practice and health education guideline</i> The application of evidence-based practice regarding patient education and hospital efforts to facilitate self-management of patients has not been well programmed. Just follow the ability and knowledge of expert (physicians, nurses and dieticians) by personal.	<i>Evidence-based nursing practice and health education guideline</i> Using guideline from diabetes association to provide education in supporting self-management in hospitals.
<i>The information media to support self-management</i> the transferring of information is by using leaflets or sometimes without using any media.	<i>The information media to support self-management</i> Using big group, small group education with support system to increase the knowledge of patients to be able to be independent and having ability to do self-management while at home.

MODEL OF SELF MANAGEMENT

The model of self-management below developed from several research was conducted by other researcher and observation during practicum process, which is health system, communication, financial/health insurance, clinical, spiritual and culture, psychological, support and knowledge are suitable to be applied for the practicum result and clinical setting. Development of the nursing model encountered to meet suitable to be applied in hospital setting. This following developed model could be fit enough can be seen below.



This following word is the explanation of the developmental of self-management model modification in clinical setting:

Knowledge

Individuals reported that knowledge about disease processes, the role of medications and their treatment plan was critical to their ability to successfully self-manage. Most importantly, individuals needed to know how to apply self-management knowledge to their lives. They reported that if they did not know why and how to manage their chronic illness, self-management efforts were impeded (Schulman, 2015).

Psychological

Individuals reported that psychological distress influenced their self-management. Stress, including the pressure of multiple roles (Modeste & Majeke 2010) was mentioned as a

barrier to self-management (Balfe 2009, Mead et al. 2010). Similarly, fear, anxiety and impaired mood (Chasens & Olshansky 2008, Jo Wu et al. 2008, Wortz et al. 2012) had a negative impact on self-management (Wu et al. 2011, Ploughman et al. 2012); however, anxiety also served as a facilitator when it caused individuals to be more vigilant of symptom monitoring and other self-management tasks (Riegel et al. 2010).

Support

Individuals reported that positive support from partners or peers was very influential (Hwu & Yu 2006, Gee et al. 2007, Brand et al. 2010, Henriques et al. 2012) and increased empowerment (Brand et al. 2010). Family and friends, especially those nearby (Hwu & Yu 2006, Emler et al. 2010), helped with various aspects of self-management, including preparing healthy food, providing reminders about medication and accompanying individuals to medical appointments (Winters et al. 2006, Lundberg & Thrakul 2011, 2012).

Financial/ Health Insurance/ Health System

Health system factors that influenced individuals' ability to carry out self-management tasks included access to health care, the ability to navigate the healthcare system and ensure continuity of care and relationships with providers.

Access Individuals reported that access (or lack of access) to specialists, nursing care and alternative therapy was an important factor that influenced.

Access to educational resources from outside the healthcare system, such as obtaining information from radio, books, or brochures, was identified as a facilitator (Schnell et al. 2005, Brand et al. 2010, Lundberg & Thrakul 2011, 2012).

Long wait times for appointments, unreturned phone messages, or confusing communication with clinic staff negatively affected self-management (Schnell et al. 2005, Gordon et al. 2007, Brand et al. 2010, Newcomb et al. 2010). Some adults who had

multiple healthcare providers said that they did not know who to call or when to call (Brand et al. 2010). Furthermore, when individuals saw different providers at every appointment, they expressed challenges in communication and difficulty obtaining prescriptions (Plach et al. 2005, Gordon et al. 2007, Newcomb et al. 2010). Inconsistent advice by providers was also noted when there was a lack of continuity of care (Riegel & Carlson 2002).

Self-management was facilitated by positive patient-provider relationships where patients had time to share concerns, related to their provider and felt support, trust and empathy. Feeling confident in their healthcare providers' competence was reported as necessary to follow recommended self-management tasks (Zhang & Verhoef 2002, Winters et al. 2006, Wu et al. 2011).

Limited financial resources, lack of insurance and financial instability were reported as major barriers to self-management. For example, low-income individuals paid more attention to their economic survival than to controlling their disease (Nagelkerk et al. 2006, Modeste & Majeke 2010, Lundberg & Thrakul 2011). The high price of medication, healthy food, supplies and alternative therapies served as barriers to self-management by restricting individuals' choices. Factors related to employment, such as loss of work or maintaining working ability, were also reported to affect self-management efforts. Lack of or limited insurance coverage greatly impeded self-management by decreasing individuals' access to health care and creating difficulties in obtaining medication (Gee et al. 2007, Mead et al. 2010, Newcomb et al. 2010, Vest et al. 2013).

Spiritual and Culture

Individuals reported that spiritual beliefs affected their coming to terms with a chronic illness and accepting the resultant change in life (Plach et al. 2005, Foster & Gaskins 2009, Handley et al. 2010). In addition, prayer and spiritual beliefs contributed to individuals'

sense of control and confidence in their ability to self-manage.

Perceptions of the positive and negative consequences of self-management tasks were also reported to influence self-management efforts (Schnell et al. 2005, Hwu & Yu 2006, Lin et al. 2008, Henriques et al. 2012, Lundberg & Thrakul 2012).

Cultural beliefs and traditions primarily affected individuals in terms of a lack of congruence between people's cultural.

Communication

Good communication was essential to positive patient–healthcare provider relationships. When providers used medical jargon or technical language (Paterson 2001, Riegel & Carlson 2002, Zhang & Verhoef 2002, Gordon et al. 2007, Jowsey et al. 2009), patients were confused and left wondering what they should be doing. The same was the case when providers rushed communication or provided an inadequate amount of information (Gordon et al. 2007, Costantini et al. 2008, Brand et al. 2010, Newcomb et al. 2010, Oftedal et al. 2010a, Ploughman et al. 2012).

Clinical

Including comorbidities, illness severity, symptoms, side effects from treatment and cognitive functioning were cited as factors that influenced self-management tasks. Physical comorbidities added complexity to healthcare regimens and contributed to symptoms that interfered with self-management efforts (Riegel & Carlson 2002, Roberto et al. 2005, Hwu & Yu 2006, Utz et al. 2006, Brand et al. 2010, McCarthy et al. 2010, Newcomb et al. 2010, Riegel et al. 2010, Ploughman et al. 2012, Wortz et al. 2012, Griva et al. 2013).

For example, shortness of breath from chronic obstructive pulmonary disorder could contribute to inability to exercise as part of diabetes or cardiac self-management (Schnell et al. 2005).

CONCLUSION

Before applying the model of self-management in Indonesia, there are several challenges need to break-down based on the practicum's finding:

1. Self-management will be successful if there was supporting from a good hospital and health system. It might take a long time to change the big system that is in the clinical setting.
2. Good communication from health workers will be able to increase patient motivation to be able to do self-management. Need training was certified like diabetes educators training to make everything more organized.
3. Great equipment (laboratory test, sympathetic skin response test, R-R interval variation, pulse volume recording test) with international standard also very essential to support self-management system.
4. Health insurance system that is well-organized and easy, so it can accommodate all the needs from the community of DM patients on health care demand. Need a political power to make this challenge become successful.

Without a good system in the hospital, good communication between health workers and patients, equipment supports and political power from government, self-management will very hard become successful. Need more time and resources to accommodate it. Therefore, for the first step, increase patient knowledge will be possible think to increase of self-management among DM patients in Indonesia.

SUGGESTIONS

The model of self-management might could successfully be applied in clinical setting in Indonesia, if the challenges can be resolved. Here several strategies might be applied to resolve those challenges, such as:

1. Building Healthcare System in the Hospital

To create the healthcare system in the hospital could be conducting these real actions, as follow:

- a. Education system related to self-management of DM patients have to be prepared by the hospital with good standardization, follow the standard from international diabetes association.
 - b. Preparing well organized Flow of educational services in hospitals.
The laboratory check for HbA1c before Consultation to the doctor then the nurse educator's and nutritionist rooms to evaluate their self-management
 - c. Prepared great health workers who involved in educational programs related to self-management including nurse educators, dieticians and doctors of metabolism and endocrine, heart, kidney and eye specialists for DM patients with complications.
 - d. Prepared great equipment with good standardization (eye examination, R-R interval variation, sympathetic skin response examination, laboratory check).
 - e. Training and certification for healthcare providers to strengthen confidence.
2. Shaping the policy with national healthcare policy maker related with health assurance
 3. Gaining Board Level Support to increase knowledge among DM patients

Big group and small group education with support system to increase the knowledge of patients to be able to be independent and having ability to do self-management while at home.

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DECLARATION OF CONFLICTING INTEREST

We want to analyze the diabetic Self-management among the Indonesian and Taiwan population in Hospital then develop theory-guided and/ or evidence-based nursing model in the self-management among diabetic patient with practical issues.

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AUTHOR CONTRIBUTION

Satriya Pranata: Design of study, analyze and develop theory-guided and/or evidence-based nursing model in the self-management among diabetic patient with practical issues between two hospitals.

Hwang Hei-Fen: Analyze and develop theory-guided and/or evidence-based nursing model in the self-management among diabetic patient with practical issues between two hospitals.

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