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THE STANDARDS OF MEDICAL CARE WITH SELF CARE FOR DIABETES MELLITUS OUTPATIENTS

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ABSTRACT

Background: *Diabetes mellitus (DM) is a chronic disease that will be carried for life. DM management requires the participation of doctors, nurses, nutritionists, and other health workers. Based on this, Diabetes mellitus (DM) requires awareness, self care and collaboration from all health workers. The awareness, self care and collaboration of health workers on the importance of carrying out two-way services in patients with diabetes mellitus are the supporting forces in the DM case control program according to the standard of medical care. This study is to find out the standard of medical care with self care for diabetes mellitus outpatients.*

Methods: *A systematic review through an article review to find out the standard of medical care with self care for diabetes mellitus outpatients. The inclusion criteria for the articles used were diabetes mellitus outpatients self care, while the exclusion criteria were abstract articles, articles that did not use English and the non full text articles. Article search is limited to articles in English accessed from internet searches from databases, namely: NCBI and Knowledge E with the keyword standard medical care, self care, and diabetes mellitus.*

Results: *Based on the 7 articles with the same title, the screening was carried out according to the criteria for inclusion and exclusion, obtained 5 articles for further review. Self care in diabetes is a series of skills that are very important to improve the effectiveness of self management in diabetes awareness of the patient itself and collaboration with health workers. Nurses deal with collaborative problems both between health workers and patients by using doctor's provisions and prescribed interventions, to minimize complications from the occurrence.*

Conclusion: *One of the most factor that need to be improved to decreased the case of DM is how to maintain the self care of DM outpatients. It is very important because the self care is helping the outpatient with DM to maintain their own health. Because of that, the important recommendation for DM outpatient is to maintain and increasing their standard of medical care with self care.*

Keywords: *the standard of medical care, diabetes mellitus, self care*

INTRODUCTION

Diabetes mellitus (DM) is an important risk factor for the development of active tuberculosis (TB). Diabetes mellitus is a non-communicable disease that causes sufferers to be 3 times more likely to suffer from active TB. Diabetes mellitus (DM) is also one of the most important risk factors for TB worsening. There is a relationship between DM and TB where DM is a risk factor for TB worsening, but until now it is still difficult to determine whether DM that precedes TB or TB that gives rise to clinical manifestations of DM [1].

The number of cases of DM worldwide per region in 2015 occurred in the age range of 20-79 years. The most cases are 153,2 million in the Western Pacific, 59.8 million in Europe, 44.3 million in North America and Kariba, 35.4 million in Middle East and Africa, 29.6 million in South and Central America, and 14.2 million in Africa [2]. Whereas according to the results of the 2013 national health survey and the International Diabetes Foundation (IDF) 2015, it is estimated that the number of people with DM in Indonesia is around 9.1 million people. The case of DM in Indonesia alone in 2030 is estimated to reach 21.3 million people. Based on basic health research in 2013, only about 30% of DM patients were diagnosed in Indonesia [3].

Research conducted by Ruminah shows that TB and DM services are carried out separately, most health workers do not know the TB-DM collaboration control program and guidelines for implementing TB-DM control collaboration are not yet available [4]. DM control collaboration programs have opportunities to be implemented in health facilities especially hospitals, but still need support from stakeholders, one of which is socialization and training activities.

Diabetes mellitus (DM) is a chronic disease that will be carried for life. Because of that, it is very important to control DM by improving the standard of medical care with self care. DM management requires the participation of doctors, nurses, nutritionists, and other health workers [5]. Based on this, Diabetes mellitus (DM) requires awareness, self care and collaboration from all health workers. The awareness, self care and collaboration of health workers on the importance of carrying out two-way services in patients with diabetes mellitus are the supporting forces in the DM case control program according to the standard of medical care. According to the American Diabetes Association, Standard Medical Care is the most important is to improve coordination between health workers as a patient transition through collaboration in controlling diabetes [6].

A systematic study of DM disease prevention and control awareness is still small, both among policy makers, the general public, or DM patients. Health workers understanding is highly expected to always provide implementation of control and response to DM [5]. The lackness of understanding and alertness among health professionals, due to lack of proper training for health workers, often leads to delayed diagnosis. Some actions that must be taken are increasing understanding and alertness in handling cases of DM in areas with high incidence. The development of the workers of health professionals in primary and secondary care services, through basic and postgraduate training and continuing professional development, is expected to increase health workers experience and competence [7].

The main stakeholders for the successful implementation of integrated health services are the health workers. Understanding the interests of stakeholders is very important to avoid resistance to the health services intergration. The involvement of health workers in decision making can create a sense of belonging and changing acceptance. Therefore, the observed positive attitude among health workers towards the integration of DM services can indicate awareness, self care and collaboration to provide integrated DM services in the future [8].

Awareness of health workers and patients depends on age, sex, and health insurance availability and its coverage [9]. Doctors who work in hospitals are expected to be better informed. It is recommended that doctors who have sufficient experience and a strong will to be trained depend on their age. Doctors who have electronic medical records and the family medical histories of their patients seem more likely to receive health programs. A person's level of trust also affects the awareness of both patients and health workers.

Self care and control of DM may only work well if there is harmonious collaboration between policy makers, health care providers, academics and active participation from the community. The success of collaborative management and control of DM can be an example of harmonious collaboration between

the handling of communicable and non-communicable diseases. Therefore, the participation of health workers as academics and health care providers is indispensable for the success of collaboration [10]. Based on the explanation above, it is important to know how awareness, self care and collaboration management of health workers in dealing with DM problems.

METHODS

The research used systematical review through articles review to find out the standard of medical care with self care for diabetes mellitus outpatients. The inclusion criteria for the articles used were diabetes mellitus outpatients self care, while the exclusion criteria were abstract articles, articles that did not use English and the non full text articles. Search are limited to articles in English accessed from internet searches from databases, namely: NCBI and Knowledge E with the keyword standard medical care, self care, and diabetes mellitus. Articles that meet the inclusion criteria are collected and examined systematically. Also conducted literature searches that published only from 2008 to 2018. The keyword that is using to find out the articles are the standard of medical care, diabetes mellitus, self care. From the search process, there were 5 articles that fulfilled the requirements for inclusion and exclusion criteria.

RESULTS

Based on the search results, it was found that 14 articles were considered to be in accordance with the systematic purpose of this review and then put it together, then screening it whether the article has the same title or not. After screening, there were 7 articles with the same title. From these 7 articles, the screening was carried out according to the criteria for inclusion and exclusion, obtained 5 articles for further review. There is a literature search strategy that can be seen in the following table:

Table 1. Literature search strategy

Search	NCBI	Knowledge E
Result	11	2
Fulltext, pdf, 2008-2018	11	
Appropriate title	5	
As per criteria		5
Result		5

Decent research consists of several studies conducted in various countries. Analysis of the 5 articles shows that 3 journals use quantitative design, 1 journal uses a qualitative design and the rest is a descriptive study. After conducting an assesment of quality studies, 5 articles can be categorized well and then the data is extracted. Data extraction is done by analyzing the data based on the author's name, title, purpose, research method and results as well as grouping important data in the article. The results of data extraction can be seen in Table 2.



No.	Author	Research's Title	Journal	Objectives	Methods	Results
1.	Kichko, K., Marschall, P., & Flessa, S. (2016) [9]	<i>Awareness, Acceptance, Use and Preconditions for the Wide Implementation into the Medical Standard</i>	<i>Journal Personalized Medicine</i>	To collect comprehensive data about the public and physician awareness, acceptance and use of Personalized Medicine (PM),	Survey analyzed by means of descriptive and non-parametric statistic methods	Awareness of health workers and patients depends on age, sex, and health insurance availability and its coverage. Doctors who work in hospitals are expected to be better informed. It is recommended that doctors who have sufficient experience and a strong will to be trained depend on their age. Doctors who have electronic medical records and the family medical histories of their patients seem more likely to receive health programs. A person's level of trust also affects the awareness of both patients and health workers.
2.	Lin <i>et al.</i> (2015) [14]	<i>Screening For Pulmonary Tuberculosis In Type 2 Diabetes Elderly: A Cross-Sectional Study In A Community Hospital</i>	<i>Journal BMC Public Health</i>	To find out screening for pulmonary TB in type 2 elderly diabetes: cross-sectional study in a community hospital	Quantitative	Health workers have awareness in carrying out TB-DM prevention and control efforts. Health workers understand that there are different programs now and then, so they are interested in increasing their knowledge and skills. In the past, TB disease was only screened for TB, now two-way screening is done, namely DM screening. As well as DM disease patients who have TB symptoms are screened for TB. Active screening is very helpful in detecting pulmonary TB in elderly patients with a DM history.
3.	Shrivastava <i>et al.</i> (2013) [16]	<i>Role Of Self-Care In Management Of Diabetes Mellitus</i>	<i>Journal of Diabetes & Metabolic Disorders.</i>	To find out the role of self-care in diabetes mellitus management.	Quantitative deskriptive	To prevent diabetes-related morbidity and mortality, there is an immense need for self-care behavior that is dedicated in many domains, including food choices, physical activity, proper medication intake and blood glucose monitoring from patients.



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No.	Author	Research's Title	Journal	Objectives	Methods	Results
4.	Prakash (2012) [15]	<i>Tuberculosis-Diabetes Mellitus Bidirectional Screening At A Tertiary Care Centre, South India</i>	<i>Journal Public Health Action</i>	To find out the two-way TB-diabetes mellitus screening in a tertiary care center, South India.	Descriptive study	Two-way screening for DM and TB is feasible and produces high results for DM among TB patients. TB outcomes among DM patients are low and require future research using a new TB diagnostic tool which is increased by 25% to 44%.
5.	Workneh, M.H, Bjune G.A dan Yimer S.A (2016) [8]	<i>Assessment Of Health System Challenges And Opportunities For Possible Integration Of Diabetes Mellitus And Tuberculosis Services In South-Eastern Amhara Region, Ethiopia: A Qualitative Study.</i>	<i>BMC Health Services Research</i>	To determine the assessment of health system challenges and opportunities for possible integration of diabetes mellitus and service tuberculosis in the Amhara Tenggara region.	Qualitative	The main themes identified from the analysis were: The availability of the system for continuity of DM care. Inadequate knowledge and skills of health workers. Frequent run out of DM supplies. Patient's inability to pay for DM services. Poor DM data management. Lack of attention given to DM care. The presence of a well-established TB control program is up to the community level. High level of interest and readiness among health workers, program managers and leaders at different levels of the health care delivery system.

From the articles above, it was found that all the articles are discussed about the standard of medical care with self care for diabetes mellitus outpatients. In all of the 5 journals that have been reviewed, described that to prevent DM morbidity and mortality, self care for the outpatients is needed.

The study in South India [4] and the study by Lin *et al* [2] described about TB-DM and have been find out that the active screening and new TB diagnostic tool are required to improve the screening. The other study in Ethiopia [5] find out that the main themes identified from the analysis were the availability of the system for continuity of DM care, inadequate knowledge and skills of health workers, frequent run out of DM supplies, patient's inability to pay for DM services, poor DM data management, lack of attention given to DM care, and the presence of a well-established TB control program is up to the community level, and also high level of interest and readiness among health workers, program managers and leaders at different levels of the health care delivery system.

DISCUSSION

The standard of medical care with self care for diabetes mellitus outpatients refers to self care, awareness and collaboration of health workers, and review of 5 journals in accordance with the title and problem of this study. Diabetes is a disease with an increase in blood glucose above normal where blood glucose levels are regulated by the hormone insulin produced by the pancreas. Diabetes is a group of chronic diseases due to systemic metabolism disorders [11]. Diabetes can affect anyone. It cannot be cured, but can be prevented by lifestyle changes and self care.

Self care is an implementation of activities initiated and carried out by the individual itself to meet the needs to maintain health, life and well-being in accordance with conditions both healthy and sick.¹² Self care in diabetes is a series of skills that are very important to improve the effectiveness of self-management in diabetes, with awareness from the patient itself and collaboration with health workers. Skills carried out in self care consist of arrangements for diet, physical exercise, monitoring blood sugar levels, taking medication regularly, solving problems reducing complications and healthy coping. Self care diabetes adds a regular component of foot care because it includes healthy behavior that is expected to be carried out by diabetic patients with the aim of reducing and detecting high risk foot disorders early. This can be done with awareness efforts and collaboration of health workers with patients with diabetes mellitus.

Awareness in the Great Dictionary of Indonesian Language means things that are felt or experienced by someone, as ownership of knowledge or becoming aware of someone, situation or something. Awareness usually arises from yourself or external encouragement. Awareness from within self arises because of desire or need. External awareness can arise because of the trigger factors that are intentionally made by other people or certain conditions that make individuals have awareness [13].

Carl Gustav Jung's theory suggests that awareness consists of 3 interconnected systems namely ego, personal unconsciousness and collective unconscious. Awareness is explained as follows [13]: Ego is a conscious soul consisting of perceptions, memories, thoughts and conscious feelings. Ego is a human part that makes him aware of himself.

- a. Personal unconsciousness is an area adjacent to the ego, which consists of experiences that have been realized but forgotten and ignored by means of repression or suppression.
- b. Collective unconsciousness is a storehouse of memory remnants that are inherited from a person's past ancestors which not only includes the history of the human race as a separate species but also the pre-human ancestors or animal ancestors. Consisting of several Archetypes, which are the memories of race, a form of universal thought passed down from generation to generation.

Types of awareness:

- a. Passive Awareness is awareness where an individual takes on all the stimulus given at that time, both internal and external stimuli.
- b. Active awareness is a condition where someone focuses on initiative, seeks and can select the stimulus given.

The results of Lin's research explain that health workers have awareness in carrying out TB-DM prevention and control efforts. Health workers understand that there are differences in programs then and now, so they are interested in increasing their knowledge and skills.¹⁴ TB disease was previously only screened for TB, now two-way screening is done, namely DM screening. As well as DM disease patients who have TB symptoms are screened for TB. Active screening is very helpful in detecting pulmonary TB in elderly patients with a DM history.

This is supported by research conducted by Prakash, two-way screening for DM and TB is feasible, with high DM outcomes among TB patients [15]. Screening of TB patients for DM can be an efficient tool for management of TB-DM co-morbidity programs. Health workers understanding among health professionals is expected to improve the implementation of TB-DM. This explains that the management of DM must be better with previous experience even though it is not TB-DM but TB-HIV.

Other research conducted by Workneh shows some research results. During the process of patient care there are several obstacles that arise including the unavailability of a system for continuity of DM care, insufficient knowledge and skills of health workers, often run of stock of DM supplies, patients inability to pay for DM services, poor DM data management, and lack of attention DM care. Whereas efforts are made by presenting an established TB control program to the community level and level of interest as well as high readiness among health workers, program managers and system leaders providing health care according to DM care standards [8].

In line with Workneh's research, the results of the study by Shrivastava et al. show that in the prevention of diabetes-related morbidity and mortality there is an immense need for self-care behavior that is dedicated in many fields, including food choices, physical activity, proper drug intake and monitoring of blood glucose from patients [16]. Of course not only self-care with a focus of awareness, but also in every process of patient care requires help from health workers or called collaboration of health workers.

The aim of collaborative tuberculosis and diabetes mellitus (TB-DM) is to reduce the burden of TB patients in people with DM and DM in TB patients through a network and partnership system. The TB-DM collaboration activity is carried out with reference to the current TB and DM countermeasures which cover:

- a. Joint planning between the TB program and DM in determining the roles and responsibilities of each program at the central and regional levels including health services.
- b. Surveillance is carried out using routine data obtained from services that have carried out TB-DM collaboration activities both from TB and DM services, as well as surveys and sentinels.
- c. Handling TB patients and people with DM is integrated in health care facilities and between health care facilities with other health facilities.
- d. Communication, Information and Education (CIE) about TB-DM
- e. Implementing principles of infection prevention and control.
- f. Monitoring and evaluation involves the collaboration of the two programs
- g. Supervising TB-DM activities in an integrated manner by both programs [17]

Health workers carry out collaborative actions with other health teams in efforts to cure and restore patient health. So that efforts in improving the quality of nursing services can be materialized. The nature of the relationship between health workers determines the quality of collaboration. Collaborative

effectiveness requires mutual respect both agree or disagreement achieved in interactions [18]. Partnership relationships as the foundation in interaction with health care providers, are good efforts for patients to achieve healing efforts and improve the quality of life of patients.

Nurses deal with collaborative problems both between health workers and patients by using doctor's provisions and prescribed interventions, to minimize complications from the occurrence. Nursing interventions are classified as nurse-initiated and doctor-initiated [19]. Nurse-initiated interventions are interventions where the nurse legally determines the nursing staff to implement them. Nurses' specified interventions address, prevent, and monitor collaborative problems. Doctor-initiated interventions show action for collaborative problems where the nurse implements and organizes it. Collaborative problems require both nurse-initiated and doctor-initiated interventions.

Based on all researches above, it can be conclude that DM is the very important factor risk that increased TB cases in population. One of the most factor that need to be improved to decreased the case of DM is how to maintain the self care of DM outpatients. It is very important because the self care is helping the outpatient with DM to maintain their own health. Because of that, the important recommendation for DM outpatient is to maintain and increasing their standard of medical care with self care.

CONCLUSION

Self care in diabetes is a series of skills that are very important to improve the effectiveness of self management in diabetes with awareness of the patient itself and collaboration with health workers. Nurses deal with collaborative problems both between health workers and patients by using doctor's provisions and prescribed interventions, to minimize complications from the occurrence.

Hospitals need to pay more attention to nurse-initiated interventions by overcoming, preventing, and monitoring collaborative problems between health workers and patients with diabetes mellitus. Nurses cope with collaborative problems between health workers and patients using doctor's provisions, prescribed interventions and nursing to minimize complications from these occurrence.

IMPLICATIONS

Hospitals need to pay more attention to nurse-initiated interventions by overcoming, preventing, and monitoring collaborative problems between health workers and patients with diabetes mellitus. Nurses cope with collaborative problems between health workers and patients using doctor's provisions, prescribed interventions and nursing to minimize complications from these occurrence.

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