

Research Article

The Life Diabetes Conversation Map Improves Control of Diabetes Among the Elderly: Challenges and Modifications for the Indonesian Community - An Integrative Review

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Abstract.

The number of people who have diabetes has been increasing rapidly. Diabetes is a chronic illness that requires continuous intervention to prevent long-term complications and lower the financial burden of treatments. In the elderly, diabetes is linked to higher mortality, reduced functionality, and increased risk of hospitalization. Educational tools that cater to the elderly need to be used to improve the quality and outcomes of patient education among those with diabetes. This paper discussed strategies for improvement using the *Life Diabetes Conversation Map* in diabetes self-management education among the elderly with diabetes. We conducted a non-systematic search to find evidence from online databases using the keywords: diabetes conversation map, diabetes education, and elderly. Then, we discussed and conducted an integrative review of the *Life Diabetes Conversation Map* based on how it works, and the benefits and the feasibility or challenges for the Indonesian community. Our findings suggested that the *Diabetes Conversation Map* was an innovative patient educational tool that used interactive group participation to empower people with diabetes to become actively involved in managing the disease. The maps are a series of pictorial guides through which people engage in discussion and share their beliefs and their experiences of living with diabetes which has many benefits. Challenges for the Indonesian community included needing further innovation for proper language and cultural adjustment and integration into the Public Health Centers' activities as a primary health care service. Along with these activities, elders could join cooking activities or regular aerobic exercise.

Keywords: self-management education, Diabetes conversation maps, public health center activity, elderly

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Published 23 June 2023

Publishing services provided by Knowledge E

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Selection and Peer-review under the responsibility of the HSIC Conference Committee.

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1. INTRODUCTION

According to the Indonesia Ministry of Health (MOH, 2012), diabetes is one of the non-communicable diseases that is most preventable and treatable among the Indonesian community. According to World Health Organization (WHO), the number of people with diabetes will double by 2030 worldwide and in Indonesia [1]. The number of diabetes is increasing year by year; based WHO in 2012 [1], there were lists of the top 10 countries with the highest number of estimated diabetes cases in 2000 and 2030, whether Indonesia ranked the fourth in the world which have 8.4 million diabetes people in 2000 and will increase to 21.3 million diabetes people in 2030 [2, 3]. In addition, Indonesia has a prevalence of diabetes at 4.81% of 156 million total adult population in 2012 [4]. In addition, the Centers for Disease Control and Prevention (CDC) suggest that even if diabetes incidence rates level off, the prevalence of diabetes will double in the next 20 years, in part due to the aging of the population [5]. Another study report that the number of cases of diagnosed diabetes in elders (aged ≥ 65 years) will increase by 4.5-fold (compared to 3-fold in the total population) between 2005 and 2050 [6]. WHO [7] also reported that the number of diabetes death in older adults (age more than 70 years old) in Indonesia was 3% higher than in those aged 30-69 years old (2.800 people difference), and the number of death attributable to high blood sugar level was 3.7% higher in older aged more than 70 years old than the younger.

Diabetes effect on elders was reported to be linked to higher mortality, reduced functional status, and increased risk of institutionalization/ hospitalization. Moreover, the older adults with diabetes were not only at substantial risk for both acute and chronic microvascular and cardiovascular complications of the disease but also had the highest rates of major lower-extremity amputation, myocardial infarction (MI), visual impairment, and end-stage renal disease of any age-group [8]. Others reported that those aged ≥ 75 years have higher rates than those aged 65–74 years for most complications, deaths from hyperglycemic crises also are significantly higher in older adults, and they have double the rate of emergency department visits for hypoglycemia than the general population with diabetes [9].

Diabetes is a chronic illness that requires continuing medical care and education to prevent acute complications and reduce the risk of long-term complications [10]. People with diabetes are susceptible to severe complications, including blindness, lower limb amputation, and renal and cardiac disease, and the consequence is that the cost of treating diabetes and its related complications is rising (McDowell, 2005; American Diabetes Association (ADA), 2003). Diabetes and its complications have a significant

economic impact on individuals, families, health systems, and countries [11]. Diabetes is not only a health problem but also a global societal burden, and governments worldwide are stressed about meeting the cost of diabetes care [11]. Diabetes not only causes many low-income families are more suffer in poverty by losing their earnings due to diabetes and its lifelong costs of health care, but it also will increase the expenditure of their employers and affect the national economies [11, 12]. For instance, the WHO estimates that from 2006-2015, China will spend \$558 billion from their national income due to heart disease, stroke, and diabetes [1]. In addition, based on a study about Global Health Care Expenditure on Diabetes for 2010 and 2030, it is estimated that the total annual global health expenditure for diabetes in 2010 is between USD 376.0 billion to USD 672.2 billion, or between ID 417.8 billion and ID 745.7 [1, 13]. In Indonesia, the average health care expenditure per person with diabetes is around USD 80.22. It means that Indonesia can spend more than USD 1.7 billion (it could be estimated to have 21.3 million people with diabetes [11]. For this reason, reducing the risk of complications is vitally essential, not only from the patient's side but also from the economic point of view [1, 3, 12].

As the costs of treating mal-managed diabetics are high, in order to avoid the high-cost treatment in severe complications, the self-management is believed as a vital key point [14-16]. Self-management is defined as an individual's ability to detect and manage symptoms, treatment, physical and psychosocial consequences, and lifestyle changes (such as exercise and diet) inherent in living with a chronic condition [14, 17, 18]. Self-management is suggested by many studies that affect improving glycosylated hemoglobin levels for persons with diabetes and systolic blood pressure for those with hypertension [16]. Based on American Association of Diabetes Educator (2010), there are seven domains of self-care behavior, including healthy eating, controlling blood sugar, problem-solving, being active, taking medication, healthy coping, and reducing the risk. Those of all self-management tasks are not easy ones. So, people with diabetes need proper preparation, support in implementing good behavior and helping from difficulties. One of the proper preparation here is patient education. Diabetes self-management education (DSME) is a cornerstone in managing diabetes and aims to modify lifestyle and promote self-management practices to improve metabolic outcomes. Several DSME implementation methods include one-on-one sessions, group education, web-based information, and audio, video, and printed materials. One of the most recent education tools for DSME is the set of Diabetes Conversation MapsTM. Therefore, the purpose of this paper is to discuss and propose the Life Conversation Map to improve the

control of diabetes among diabetes elders due to the challenge and modifications in the Indonesian community.

2. METHODS

We conduct a non-systematic search to find the evidence from online databases with keywords: diabetes conversation map, diabetes education, elderly. Then, we discuss and conduct an integrative review of the *Life Diabetes Conversation Map* based on what, how it works, and the benefits and feasibility or challenges in the Indonesian community.

3. FINDINGS

What are Diabetes Conversation Maps?

Diabetes Conversation Maps was developed by Healthy Interactions of Chicago, Ill., in collaboration with the International Diabetes Federation (IDF). Conversation Map education tools are an innovative method that uses interactive group participation to empower people with diabetes to become actively involved in managing the disease. The maps are a series of pictorial guides through which people are engaged in discussion, sharing beliefs and experiences about their lives with diabetes. In this activity, the health care professional serves as a facilitator guiding the discussion. Participants learn facts and information related to diabetes self-management and care. Diabetes Conversation Maps are available in 38 languages and have been used in approximately 120 countries [20].

Diabetes Conversation Maps provide familiar situations through which people with diabetes can easily understand different aspects of the disease and relate them to their personal experiences. This program applies activity cards to initiate discussions, through which participants acquire information from each other with the facilitator's validation. There were 5 (five) conversation maps main topics, including (1) on the road to better managing your diabetes, (2) diabetes and healthy eating, (3) monitoring your blood glucose, (4) continuing your journey with diabetes, and (5) caring for gestational diabetes. In addition, there were also provide special topics such as 'Diabetes and caring for your feet,' which covers the questions about why it is essential to care for your feet, looking at your feet every day, cleaning and caring for your feet, protecting and choosing proper footwear and what to do if you discover foot problems. Besides being notable for a Muslim Diabetic, there were also topics such as managing diabetes

during Ramadan (fasting month) [21]. Elders' developed life conversation maps were easy to use and understand [22-24].

3.1. Evidence supported for Diabetes Conversation Maps

Srulovicia, et al. [22] suggest that from the systematic review. However, the Conversation Map program provides limited support regarding its relationship with positive health outcomes, patient-reported outcomes, or health behaviors, but the conversation map can potentially improve health and health behavior outcomes among people with diabetes. While Vaccaro, et al. [25] reported that compared with regular care, patient education using Conversation Map was superior to regular care in terms of diabetes knowledge, besides, six months after education was completed, he suggested that Conversation Map should be considered for use in patients requiring diabetes education. Moreover, Paul and Scott [26] suggest that participation in the journey to life conversation map improves control of hypertension, diabetes, and hypercholesterolemia with diabetes. Based on the study to evaluate Diabetes Conversation MapTM as an educational tool for diabetes Self-Management Education Diabetes conducted by Ghafoor, et al. [27], the Conversation MapsTM education tools are proved to be effective for diabetes self-management education and facilitating behavior change in people with type 2 diabetes and it may improve patients' chances of attaining desirable diabetes control [25, 28, 29].

Based on the Healthy Interaction [19] collected from many studies, American Diabetes Association in 2014 reported that the diabetes conversation map had reduced 43% of the cost of incidence of hypoglycemia for a patient with type 2 diabetes compared with standard group education. In addition, the conversation maps education program has reported a higher rate of return and enjoyment levels of patients (48% and 97%, respectively), while regular education was only 11% and 57%, respectively. Another study reported that from all health measurement outcomes, including blood glucose, HbA1C, blood pressure, cholesterol, statin, and aspirin use, retinopathy screening, foot examination, and pneumococcal vaccination, conversation maps had achieved higher and better outcomes [19, 30-32]. In addition, based on an independent survey of Canadian Diabetes Conversation Maps Educators, other benefits from conversation maps are with active involvement, which they must discuss and talk to each other, the learner will get more understanding of materials, also from the educator's point of views, conversation maps makes group teaching more interactive and engaging [20].

3.2. Challenge in Indonesia

Current patient education in Indonesia mainly uses traditional methods such as only using limited minutes of public lecture sessions, giving written leaflets, providing pamphlets, and sometimes providing a limited time of private counseling. It affects to lack of awareness of diabetes self-management, including patients' diabetes knowledge. Since the conversation maps proved to be an effective strategy to educate diabetes patients, it is highly recommended to apply in Indonesia, so

it needs widespread application in primary health care services, especially in Public Health Centers and Hospital Based in Indonesia. Unfortunately, there were not only minimal knowledge and resources about this method but also still a lack of resources, especially the availability of diabetes educator. Moreover, there were no available diabetes conversation maps in the Indonesian version yet. Facing these challenges, future improvement and modification of diabetes conversation maps for the Indonesian community with proper language and culturally adjusted.

Another challenge is the culture or society's habits of seeking health care assistance. Indonesian people, especially elders, seek healthcare assistance when the only reason for such complications. Most have health-seeking behavior that was still a 'curing' for some complication but not for 'preventing' the risk. There were quite difficult collecting elders for a group activity. Thus, the proposed modification is combining or integrating the Diabetes Conversation Maps with other activities such as exercise (group aerobic exercise), a program of cooking together, providing physical health examination, etc., so that it is more enjoyable and engaging and interests elders to comes and return to join this programs [20] . This program will be conducted as a community-based program that cooperates and integrates with the Public health service monthly program called ' Posyandu Lansia,' a program for elders that usually only provides essential health examinations.

Further preparation for this innovation involves four parts: preparing educators, providing groups, approaching the government, and cooperating with the university. In order to prepare the educator, it needs to join diabetes conversation maps training so that we have a proper and qualified educator for diabetes conversation maps. Then it needs to recruit volunteers called "Kader" in the community to help this program conducted continually. Besides, it also needs to socialize the method, the work, and benefits both to 'Kader' and elders with diabetes so that they can more readily accept this proposed activity. This program will be a community empowerment activity program [33]. Related to the group activity, it can use the group from the usual monthly

Public Health Centers monthly program (Posyandu Lansia) in every district. Then, the government approach means that this program needs support from the government for funding, education, and other facilities. Finally, cooperation with the university means that this program can have mutual benefits for both parts, the university can provide their nursing student to help to conduct this activity, and it can be a practical field for them to educate and take care of diabetes patients in the community.

3.3. Expected outcomes

This program will be expected to improve self-management among diabetes patients, especially for elders, and it can improve patients' and community's empowerment in supporting diabetes self-management. The further expected outcomes may this program will help reduce the cost of treatment of diabetes by reducing the risk of complications among people with diabetes, and it can shift the paradigm from "Curing to Caring/ Controlling" diabetes so that more people will have the awareness to do (for diabetes patient) and support (for family member, society and health care professionals) the prevention of the diabetes complications.

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