



Diabetes Self Management Education (DSME) to Improve Diabetes Education in Patients With Diabetes Melitus: Literature Review

Wahyono¹, Fitria Handayani², Niken Savitri³

¹ Master Student of Adult Nursing Departement, Diponegoro University

^{2,3} Lecturer of Adult Nursing Departement, Diponegoro University

E-mail : wahyono355@yahoo.co.id

ABSTRACT

Diabetes mellitus is a chronic disease that requires a change in the healthy behavior of the patient for his recovery. Diabetes Self Management Education (DSME) integrates the four pillars of Diabetes Mellitus Management independently emphasize the behavioral interventions which help people with diabetes to change their lifestyles in terms of diabetic self care. The objective of research Identify diabetes self-management education (DSME) features to improve diabetes education for people with diabetes mellitus. Method We conducted a literature from 3 online databases like PUBMED, Science Direct and Google Scholar and used 5 literature for this review. Result and Discussion the educational process of DSME are assessment, goal setting, education and evaluation based on health promotion model theory. DSME focus on management of DM, nutrition, physical activity, blood glucose monitoring, avoid/prevent/treat chronic or acute complications, resolve the psychological impact and focus on behavioural changes. From 5 studies include in our analysis, we identified that DSME have a good relationship with the positive outcome of DM. Conclusion: DSME is an effective educational method for increasing the good behavioral changes in DM.

Keywords: Behaviour, Diabetes Mellitus, Diabetes Self Management Education

ABSTRAK

Diabetes mellitus is a chronic disease that requires a change in the healthy behavior of the patient for his recovery. Diabetes Self Management Education (DSME) integrates the four pillars of Diabetes Mellitus Management independently emphasize the behavioral interventions which help people with diabetes to change their lifestyles in terms of diabetic self care. The objective of research Identify diabetes self-management education (DSME) features to improve diabetes education for people with diabetes mellitus. Method We conducted a literature from 3 online databases like PUBMED, Science Direct and Google Scholar and used 5 literature for this review. Result and Discussion the educational process of DSME are assessment, goal setting, education and evaluation based on health promotion model theory. DSME focus on management of DM, nutrition, physical activity, blood glucose monitoring, avoid/prevent/treat chronic or acute complications, resolve the psychological impact and focus on behavioural changes. From 5 studies include in our analysis, we identified that DSME have a good relationship with the positive outcome of DM. Conclusion: DSME is an effective educational method for increasing the good behavioral changes in DM.

Keywords: Behaviour, Diabetes Mellitus, Diabetes Self Management Education

Introduction

Diabetes Self-Management Education (DSME) is an effort that nurses can do to educate DM clients continuously. Intervention model of DSME has so various methods with different duration, intensity, education form, demography, and patients' clinical characteristics that cause inconsistency towards clinical and other results as reported by some researches.¹

DSME strategy is developed in health service to improve the education of diabetes clients in controlling their disease. Many researches compare the influence of group-based DSME and due to various contents and model of DSME, there is no standard description about the intervention that can be given.² The advantage of DSME is to integrate the five DM pillars emphasizing behavior intervention independently.

DSME uses the methods of guidance, counseling, and behavior intervention to improve knowledge of diabetes and improve individual and family skills in dealing with DM disease.⁴ Glasgow & Anderson state that health education approach with DSME method does not only use direct or indirect counseling, but also encourages participation and cooperation of diabetics and their families to change behavior and give behavioral education to under treatment-DM patients.⁵

Some researches about DSME that can affect DM sufferers are that DSME application can increase HbA1c level^{19,20}, improve diet education behavior^{21,24}, and affect physical activity of DM sufferers positively²². Another research reveals that weakness of DSME application is the gap between developed and developing countries in the case of method and education model¹⁸, inadequate diabetes education²³, as well as insufficient number of diabetes educator to change DM patients' behavior.

METHOD

The method used in this literature review was a comprehensive strategy such as article search in research journal database, internet search, and article review. The database search covered ProQuest, ScienceDirect, Scopus, Pubmed, and EBSCOhost. The keywords used in this article were diabetes mellitus,

Wahyono, Fitria Handayani, Niken Savitri
Diabetes Self Management Education (DSME) to Improve Diabetes Education in
Patients With Diabetes Melitus: Literature Review

diabetes self-management education, and behavior. Of 29 gained journals, 3 journals were analyzed through objective, topic suitability, research method, sample size, research ethic, and each article's result, and limitation.

Researcher	Title	Sample	Method	Out put
Lou Qingqing, 2011	A Sistematic review of the literature-Diabetes Education In Mainland China	3018 articles	A Sistematic review of the literature	1. Diabetes education could improve diabetes and controlled glycemic in a relatively short period and it also had positive impacts toward life style behavior change. 2. Research limitation: Educators in China were still limited, unequally distributed throughout the villagers who had less access to education.
Enza Gucciardi, 2013	A Syatematic Literarture Review of Diabetes Self Management Education Features To Improve Diabetes Education in Women of Black America/Caribbean and Hispanic/Latin American Ethnicity.	9019 articles	Randomized controlled trial and comparative study.	Conclusion: The different DSME features were able to influence self-management of African/Caribbean females and Hispanic/Ethnic Implication: With the emphasize concentrated on patients' treatment, patients and service provider can consider choices based on DSME features.
Carole Chrvala, 2015	A Diabetes Self-Management Education for adults with type 2 diabetes mellitus: A systematic review of the effect on glycemic control	3095 articles	Systematic review included was restricted to RCT	Result: There were 118 interventions, with 61,9% occurrence of significant change towards A1C reduction. Conclusion: This systematic review showed A1C decline statistically.
Louise Schinckus,	Assessment of implementation	418 articles	Literature review	Result: Fidelity implementation

Wahyono, Fitria Handayani, Niken Savitri
Diabetes Self Management Education (DSME) to Improve Diabetes Education in
Patients With Diabetes Melitus: Literature Review

2014	fidelity in diabetes self management educations programs: a systematic review (Louise Schinckus, 2014)			insignificantly influenced DSME. Conclusion: This review literature revealed that the report of this DSME must explain how this program was executed systematically.
Lifeng Fan, 2009	Effectiveness of Diabetes Self-management Intervention Elements: A Meta-analysis	50 studies	Meta analysis, RCT	Result: Overall, the weighted average effects of DSME interventions were 1,29 for knowledge, 0,51 for metabolic control and 0,36 for self-management behavior. Conclusion: This result gave evidence of effective DSME intervention to researchers and practitioners in improving knowledge, behavior, and metabolic control result between patients with diabetes type 2.

Discussion

The effective DM management must optimize patients and their families' ability in following the treatment program. Diabetes Self-Management Education (DSME) was an education process for individuals and families with DM by using the methods of guidance, counseling, and behavior intervention to improve knowledge of DM and individual and family's skills to manage DM disease. The education method used five pillars of caring DM patients either directly or indirectly. Health education and self-treatment guidance for DM patients would improve their life style so it could control blood sugar level well. A good diet for DM patients was balanced diet, regular meal schedule and various types of food consumption which were nutritious and low carbohydrate. Blood sugar level must be tested periodically; before having breakfast and dinner, the expected test result was between 70 and 120 mg/dl. DM patients were advised to do regular sports gradually according to their ability. Ideal sports were aerobic or morning jogging

for 30-40 minutes which were preceded by a 5-10 minute warming up and ended by a 5-10 minute cooling down. In addition, taking medicine as prescribed by doctors regularly must not be missed.

Those five pillars in DSME standard curriculum could be applied either directly or indirectly and the implementation could use some interventions such as media, duration, and varied media in order to give education and skill towards DM patients and their families so that they could manage DM disease well.

Conclusion and Suggestion

Diabetes Self-Management Education (DSME) is a continuous process performed to facilitate knowledge, skill, and DM clients' ability to do independent treatment. Health education approach with DSME method does not only use direct or indirect counseling method, but also encourages the DM clients and their families' participation and cooperation. The result of this literature review gives descriptions of some elements to consider in DSME implementation. The types of intervention (compound, educational components combination, behavior or physiology), education method (compound of individuals and groups), counseling ways (face to face or/and via telephone), format (compound of individuals and groups) and dose (more session and total contact hours) have all been proved to play role in DSME effectiveness and they should be the focus of further research.

References

- Chrvala CA, Sherr D, Lipman RD. Patient Education and Counseling Diabetes self-management education for adults with type 2 diabetes mellitus : A systematic review of the effect on glycemic control. *Patient Educ Couns* [Internet]. 2016;99(6):926–43. Available from: <http://dx.doi.org/10.1016/j.pec.2015.11.003>
- Sas D, Colagiuri S, Colagiuri R. Individual patient education for people with type 2 diabetes mellitus (Review). 2009;(1).
- Norris S. Effectiveness of Self-Management A systematic review of randomized controlled trials. 2014;(March 2001).
- Jack L, Services H, Liburd LC, Services H, Airhihenbuwa C. Supplement Understanding the Environmental Issues in Diabetes Self-Management

Wahyono, Fitria Handayani, Niken Savitri
Diabetes Self Management Education (DSME) to Improve Diabetes Education in
Patients With Diabetes Melitus: Literature Review

Education Research : A Reexamination of 8 Studies in. 2004;(June 2017).

Glasgow, R., & Anderson R. Moving for Compliance to Adherence is not Enough: Something Entirely Different is Need, *Diabetes Care*. Nurs J (Manila) [Internet]. 1999;1(1):1–7. Available from: <https://ejournal.unsrat.ac.id/index.php/jkp/article/view/2159>.

Diabète FI du. IDF Diabetes Atlas Eighth Edition 2017. 2017. 16-17 p.

Magliano DJ, Zimmet P, Shaw EJ. Classification of diabetes mellitus and other categories of glucose intolerance. *Int Textb Diabetes Mellit*. 2015;3–16.

Depkes RI. Tahun 2030 Prevalensi Diabetes Melitus Di Indonesia Mencapai 21,3 Juta Orang. Kementrian Kesehat Republik Indones. 2009;1–2.

Chan, Margaret W. Global report on diabetes. *World Heal Organ* [Internet]. 2014;58(12):1–88. Available from: [%0AThe](http://www.who.int/about/licensing/copyright_form/index.html)

WHO 2016. Proportional mortality (% of total deaths, all ages)*. 2016;2016.

Penelitian B, Pengembangan DAN, Pengantar K. Riset Kesehatan Dasar. 2013;

Soekidjo Notoadmodjo. Promosi Kesehatan dan Perilaku Kesehatan. 2012. 248 p.

Sabaté EW. Adherence to long-term therapies: evidence for action. *World Health Organization*. *Eur J Cardiovasc Nurs*. 2003;2(4):323.

Wong-Rieger D, Rieger FP. Health coaching in diabetes: empowering patients to self-manage. *Can J diabetes* [Internet]. 2013;37(1):41–4. Available from: <http://dx.doi.org/10.1016/j.jcjd.2013.01.001>

Khodaveisi M, Omid A, Farokhi S, Reza A. The Effect of Pender ' s Health Promotion Model in Improving the Nutritional Behavior of Overweight and Obese Women. 2017;5(2):165–74.

Kemendes RI. Situasi dan Analisis Diabetes. Pusat Data dan Informasi Kementerian Kesehatan RI. 2014. p. 2.

Soewondo P, Ferrario A, Tahapary DL. Challenges in diabetes management in Indonesia: a literature review. *Global Health* [Internet]. 2013;9:63–80. Available from: <http://search.proquest.com.virtual.anu.edu.au/docview/1491517774/fulltextPDF/E53ABED4535C4A40PQ/137?accountid=8330>

Wahyono, Fitria Handayani, Niken Savitri
Diabetes Self Management Education (DSME) to Improve Diabetes Education in
Patients With Diabetes Melitus: Literature Review

- Lou Q, Wu L, Dai X, Cao M, Ruan Y. Diabetes education in mainland China-A systematic review of the literature. *Patient Educ Couns* [Internet]. 2011;85(3):336–47. Available from: <http://dx.doi.org/10.1016/j.pec.2011.01.006>.
- Tummalapalli S, Jaber LA, Halapy H, Fernet M, Diwakaran H. Evaluation of a Pharmaceutical Care Model on Diabetes Management. *Ann Pharmacother*. 2017;30(3):238–43.
- Smith DE, Heckemeyer CM, Kratt PP, Mason DA. Motivational interviewing to improve adherence to a behavioral weight- control program for older obese women with NIDDM: A pilot study. *Diabetes Care*. 1997;20(1):52–4.
- Barnett S, Sullivan P, Anderson-Loftin W, Bunn P, Tavakoli A, Hussey J. Culturally Competent Diabetes Education. *Diabetes Educ*. 2005;31(4):555–63.
- Thomas C. Keyserling, Md M, Carmen D. Samuel-Hodge, Phd R, Alice S. Ammerman, Drph R, Barbara E. Ainsworth, Phd M, Carlos F. Henríquez-Roldan´, Ms4 5, Tom A. Elasy, Md M, Et Al. A Randomized Trial Of An Intervention To Improve Self-Care Behaviors Of African- American Women With Type 2 Diabetes. *Diabetes Care* [Internet]. 2002;25(9). Available from: <http://care.diabetesjournals.org/content/25/9/1576.full.pdf>
- Korytkowski MT, Koerbel GL, Kotagal L, Donihi A, Dinardo MM. Pilot trial of diabetes self-management education in the hospital setting. *Prim Care Diabetes* [Internet]. 2014;8(3):187–94. Available from: <http://dx.doi.org/10.1016/j.pcd.2013.11.008>

Sekretariat Jurnal Ilmiah Keperawatan Stikes Hang Tuah Surabaya
 Alamat : Jl.Gadung No. 1 Surabaya, Indonesia 60244
 Telp : (031) 8411721
 Email : jurnalilmiahkeperawatan.sht@gmail.com