

DIABETES EDUCATORS' COMPETENCIES IN FACILITATING SELF-MANAGEMENT AMONG DIABETIC PATIENTS AT GOVERNMENT HEALTH CARE CENTRES IN MALAYSIA: A CONCEPT PAPER

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ABSTRACT

Background:

According to The Fourth Malaysian National Health Morbidity Survey (2011), 2.6 million adults of 18 years and above have diabetes mellitus. Diabetes education has been a major concern of the healthcare professionals. Diabetes Educators are health care providers who specialise in the provision of diabetes self-management education and care for people with diabetes. Diabetes self-management education is a speciality area of practice and is both a therapeutic and educational intervention. In Malaysia, the role of Diabetes Educators has been highlighted with the starting of post-basic Diabetes Management Course in 2000 by the Ministry of Health, Malaysian Diabetes Association and Universiti Malaya. The course was conducted by experts in the field of diabetes care. Since the year of 2003, the training was being conducted by the Training Division of Ministry of Health. The Diabetes Educators who are trained need to apply their knowledge and skills in diabetes management to provide self-management education to patients. The aim of the study is to determine Diabetes Educators' competencies to facilitate self-management among diabetic patients in Government Healthcare Centres in Malaysia. The specific objectives of the study are to determine the socio-demographic factors of Diabetic Educators, their competencies on the five domains consisting of clinical understanding of diabetes management, culturally-competent supportive care across the lifespan, teaching and learning skills, diabetes self-management practices, and health promotion and other programs as well as the challenges faced by them in counselling diabetic patients. Other objectives are to identify the association between socio-demographic and socio-economic factors of Diabetes Educators with the five competencies studied.

Materials and Methods:

This is a cross-sectional study using a self-administered questionnaire adapted from American Association of Diabetes Educators Guidelines (2013) with 438 diabetes educators randomly selected using simple random sampling in five Government Primary and Secondary Healthcare Centres in Malaysia. The administration of the questionnaire will be done from

October until November 2014. Descriptive analysis such as mean with standard deviation will be used to illustrate the five competencies of Diabetes Educators' self-reported knowledge consisting of clinical understanding of diabetes management, culturally-competent supportive care across the lifespan, teaching and learning skills, diabetes self-management practices, and health promotion and other programs. The study will illustrate the challenges faced by them in carrying out their daily task. To test the differences in the mean scores for the independent variables (socio-demographic and socio economic factors), t-test and One Way Analysis of Variance (ANOVA) will be employed and the chi-square test will be used to find the association between the independent variables and dependent variables (five domains of competencies of diabetes educators).

Expected result:

The result of the study will yield useful information on the effectiveness of diabetes educators' competencies on the diabetics' self-management of the disease in Malaysia. The study will also describe the challenges faced by the Diabetes Educators in their daily task. This is a novel study and the result of the study can be generalized to the population of Diabetes Educators in Malaysia. The outcome of the study could facilitate the Training Division of Ministry of Health to review and enhance the implementation of the post-basic Diabetes Management course since there has not been any evaluation done after the course in the service site. Implication for practice and suggestions for further research will be discussed further.

Keywords: Diabetes educator, competencies, self-management of diabetes, diabetic patients.

1.0 Introduction

Diabetes has emerged as an epidemic of the 21st century and threatens to overwhelm the health care system in the near future. It is a disease which is strongly related to over nutrition and sedentary lifestyles. It was estimated that the number of people in the world with diabetes is projected to rise from 171 million in the year 2000 to 366 million in 2030 (Wild S, Roglic G, Green A, Sicree R & King H, 2004). The International Diabetes Federation (2009) has increased the projection of people with diabetes in the world to rise from 285 million in 2010 to 439 million in 2030.

According to The Fourth Malaysian National Health Morbidity Survey (2011), 15.2% (2.6 million) of adults 18 years and above have diabetes. Out of the 15.2%, 7.2% are known to have diabetes and 8.0% are previously undiagnosed with diabetes in Malaysia. There were nearly 1.5 million adults affected by the disease and there is an increment of about 3.3% in the prevalence of diabetes over the last decade in the country. The number of diabetics in Malaysia is 657,839 patients registered under National Diabetes Registration, Ministry of Health until December 2012. Zanariah et.al (2008) has stated that one in six Malaysians above the age of 30 years old has diabetes and the dramatic increase in the prevalence of the disease is may be due to primarily to the rise of obesity during the past decade, which has been found to be associated with rapid urbanization. Urbanization leads to sedentary types of jobs with more women move into white-collar work therefore, they have less time for cooking. In consequences, we rely more heavily on prepared food, which tends to be less healthy.

Diabetes Mellitus must be addressed as early as possible, optimally through preventions and interventions. Unfortunately, management of diabetic care in Malaysia appears to be provider-directed that focus on pharmacologic and surgical interventions, with little attention given to primary and secondary prevention (Rampal et.al, 2010). Even though the Malaysian Ministry of Health carries out various health campaigns to educate the public on diabetes, there is still lack of awareness in the community about the disease as there is poor emphasis on patient self-management behaviours by the healthcare professionals with compromised provider-patient interactions. It has been shown that the best way to prevent or determine the disease is through education. There is a need to improve the overall diabetes education particularly in areas that patients were lacking such as diabetes complications, exercise, meal practice, food sources and proportion.

We need to address the problem of lack of awareness, lack of self-care, underlying social determinants, increased prevalence of the risk factors and lack of community involvement in order to enhance management of diabetes in the country. The health professionals should act as facilitators and educators who should equip the people with the knowledge and skills to take action on the determinants of their health. It has to be a process that should promote participation of people in gaining control over their lives. The awareness of the role of health professionals need to be created among the patients.

This study intends to determine the diabetes educators' competencies in facilitating self-management among their diabetic patients in Malaysia. So far in Malaysia those have undergone this diabetes management course is not evaluated in any source. Diabetes education can be an important strategy to enhance and improve diabetes awareness in the community (Rampal et. al, 2010). Many research studies have shown that the quality of diabetes education by healthcare professionals on medications, exercise, diet, glucose monitoring, foot-care and treatment modifications have improved clinical outcomes and the quality of life of diabetics. Diabetes education is often provided by diabetes educators who focus on educating people with and at risk for diabetes and related conditions. They apply their in-depth competencies and skills in diabetes management, communication, counselling and education to provide self-management education (American Association of Diabetes Education, 2011). Competencies are defined as a cluster of related knowledge, skills, and attitudes that affect a major part of one's job, correlate with job performance, can be measured, and can be improved by training and The study will also describe the challenges faced by the Diabetes Educators in their daily task. development (American Association of Diabetes Education, 2011). Competencies are likely to vary with education, training and experience. Good knowledge of diabetes among the diabetics is likely to be directly related to the quality of care given by the diabetes educators. (Rampal et.al., 2010). Education of diabetics improves compliance with treatments and may lead to favourable treatment outcomes.

According to Anderson (2007), the amount of knowledge that is delivered to the patients depends very much on the delivery process in the education programs. The delivery process is related to the personal characteristics, counseling and educating skills of the diabetes educators. The diabetes educators' role should be reassigned as facilitators and educators rather than mere providers (Rampal et.al, 2010). There is a call for the diabetes education in the diabetes centres to be reviewed and improved. Azimah et. al (2010) has stated that the education sessions for diabetic attending a primary care centre in Kuala Lumpur needs to be

reviewed and improved especially in areas of knowledge. The modes of delivery, as well as counseling and educating skills of the educators are equally important and have to be addressed as well.

Diabetes Educators are health care providers who specialise in the provision of diabetes self-management education and care for people with diabetes. Diabetes self-management education is a speciality area of practice and is both a therapeutic and educational intervention. In Malaysia, the role of Diabetes Educators has been highlighted with the starting of post-basic Diabetes Management Course in 2000 by the Ministry of Health, Malaysian Diabetes Association and Universiti Malaya. The course was conducted by experts in the field of diabetes care. Since the year of 2003, the training was being conducted by the Training Division of Ministry of Health. The Diabetes Educators who are trained need to apply their knowledge and skills in diabetes management to provide self-management education to patients. The competencies and skills of the diabetes educators need to be enhanced so that they could accomplish those roles mentioned above effectively and efficiently. As the result, The Training Division under the Malaysian Ministry of Health has undertaken a positive step to address the challenges to equip the diabetes educators with the relevant competencies and skills. The Training Division started their in-service post basic course on diabetes management for the duration of six months in the year of 2004. The aim of the course is to produce diabetes educators who are competent and skillful in the planning and carrying out management and prevention programmes and educate the patients and community in general in self-management of diabetes. After completion the course, the diabetes educators are posted back to their respective work places to carry out their responsibilities.

According to Rampal et.al (2010), primary prevention of diabetes and its associated factors in the community is urgently required in Malaysia to combat diabetes complications. One of the approaches of primary prevention is to enhance the diabetes education in the community. Even though a number of cohorts of diabetic educators have completed the course successfully, neither the Training Division nor the Service Division has yet to evaluate the performance of the diabetes educators who are serving in the Diabetes Resource Centres in the primary and the secondary care centers. This study focuses on diabetic educators who manage diabetics at the primary and secondary care centres. A committed involvement of the diabetics in the treatment especially on the non-pharmacology treatment at the centres will enhance a better glycaemic control among the diabetic patients. This will help them to live a better quality of life.

The International Diabetes Federation (2003) has set a standard that the competence and performance of Diabetes Educators must be reviewed at least annually. As such, there is a need to determine the competencies of the diabetes educators on their knowledge on the clinical understanding of diabetes, teaching and learning skills and diabetes self-management practices with regard to management of diabetics. The findings from this study would assist the Training Division and the Service Division of MOH to review and improve the course curriculum and its implementation in near future.

The general objective of the study is to determine the Diabetes Educators' competencies in facilitating self-management among diabetic patients in Malaysia. The specific objectives of the study are to determine:

- i. the socio-demographic factors of diabetes educators (age, gender, ethnics and socioeconomic factors (job position, educational level, income level, number of years) as diabetes educator
- ii. the competency level of diabetes educators with regards to the five domains of competencies (clinical understanding of diabetes management, culturally-competent supportive care across the lifespan, teaching and learning skills, diabetes self-management practices and program and business management/diabetes health promotion)
- iii. the challenges faced by diabetes educators in counseling diabetic patients (non-recognizable role, no special allowance, empowerment on patients' diabetic control, patients' willingness to the counseling session)
- iv. the association between socio-demographic factors of diabetes educators with their competency level on the five domains of competencies.

The result of the study will yield useful information on the level of competencies and skills of Diabetes Educators who have undergone the course from self-evaluation and their own perspective. The findings would also indicate the strengths and weaknesses of the course in terms of the curriculum, its implementation, the impact on the diabetes educators and the issues and challenges faced by the educators in the centres. The findings would help the Training Division of the Malaysian Ministry of Health to improve and enhance the six month post basic course curriculum and its implementation. Thus, this study could be used as a baseline study for developing more comprehensive diabetes management courses in future. Moreover, sample size represents the population of diabetes educators in Malaysia. So the findings of this study can be generalized throughout Malaysia.

This is a cross sectional study using self-administered questionnaire. The diabetes educators' competencies and skills would have been enhanced through other sources of information such as gained from other health professionals, mass media or through other Continue Professional Development programmes after their completion of the course. However these sources of bias are not being controlled in this study. Diabetes educators are trained by two different structured curriculums prepared by University Malaya and by Training Division of Ministry of Health, Malaysia. Other curriculum structures will not be studied.

2.0 Materials and Methods

This is a cross-sectional study amongst Diabetes Educators selected from Primary and Secondary Health Care Centres in Malaysia using a set of questionnaire. The administration of the questionnaire will be done from October to March 2015 (six months). The sample size of the study is 438 (as shown in the formula below) Diabetes Educators trained by University of Malaya and Training Division, Malaysian Ministry of Health in Malaysia. Each state in Malaysia has estimation of 100 trained Diabetes Educators, giving a total of 1300. The respondents from the five states are selected by randomly drawing them from a pool of 13 states put into a box ($438 \times 13/1300 = 4.38$) The sample in the study will be selected by simple random sampling technique from the five states. The sampling frame is the list of Diabetes Educators selected from Primary and Secondary Health Care Centers in Malaysia who have undergone the Post-Basic Diabetes Management Course from University Malaya and Training Division of Ministry of Health. Diabetes Educators trained by University Malaya and Training Division of Ministry of Health will be included while those not in the service, on medical board leave during the data collection time frame will be excluded.

Sampling unit is a diabetes educator who had undergone the Post-Basic Diabetes Management Course from University Malaya and Training Division of Ministry of Health.

The sample size is an important feature of any empirical study in which the goal is to make inferences about a population from a sample. In practice, the sample size used in a study is determined based on the expense of data collection, and the need to have sufficient statistical power. In this study, a sample size of 438 Diabetes Educators trained by University Malaya and Training Division will be taken for the study. Two sample proportion is used to determine the sample size (Nisar et al.,2008)

- P1 is the level of knowledge on Diabetes in health care workers (female): 0.56
- P2 is the level of knowledge on Diabetes in health care workers (male) : 0.42
- $Z_{1-\frac{\alpha}{2}} = 1.282$, $Z_{1-\frac{\beta}{2}} = 0.842$

$$= \frac{\{1.282 \sqrt{2(0.49(1-0.49) + 0.842 \sqrt{0.199(1-0.56) + 0.42(1-0.42)})^2}}{(0.56-0.42)^2}$$

$$n = 177.84$$

$$n = 178 \text{ respondents per group}$$

$$\text{Sample size is } 178 \times 2 = 365 \text{ respondents}$$

Adjusted for 20% of non-response, giving final sample size of $365 + 73 = 438$.

The items in the questionnaire will be adapted from the American Association of Diabetes Educators Practice Guidelines for Competencies for Diabetes Educators (2013). These self-administered questionnaire English version will be modified according to our local standard. Validity will be done under expert validation (UPM experts) and Specialist Physician. A pre-test study will be conducted to determine the reliability of the questionnaire with the Cronbach alpha reliability coefficient calculated and the validity will be stated in the report.

The data will be analyzed using SPSS version 20.0 for windows. Descriptive analysis such as mean with standard deviation will be used to illustrate the competencies of Diabetes Educators' self-reported knowledge on the five domains of competencies of the diabetes educators. The study will also illustrate the challenges faced by the Diabetes Educators in their daily job. To test the differences in the mean scores for the independent variables (socio-demographic factors), t-test and One Way Analysis of Variance (ANOVA) will be employed and the Pearson Correlation test the association between the independent (socio-demographic factors) and dependent variables (five domains of competencies of diabetes educators).

The conceptual framework of the study is illustrated in figure 1.

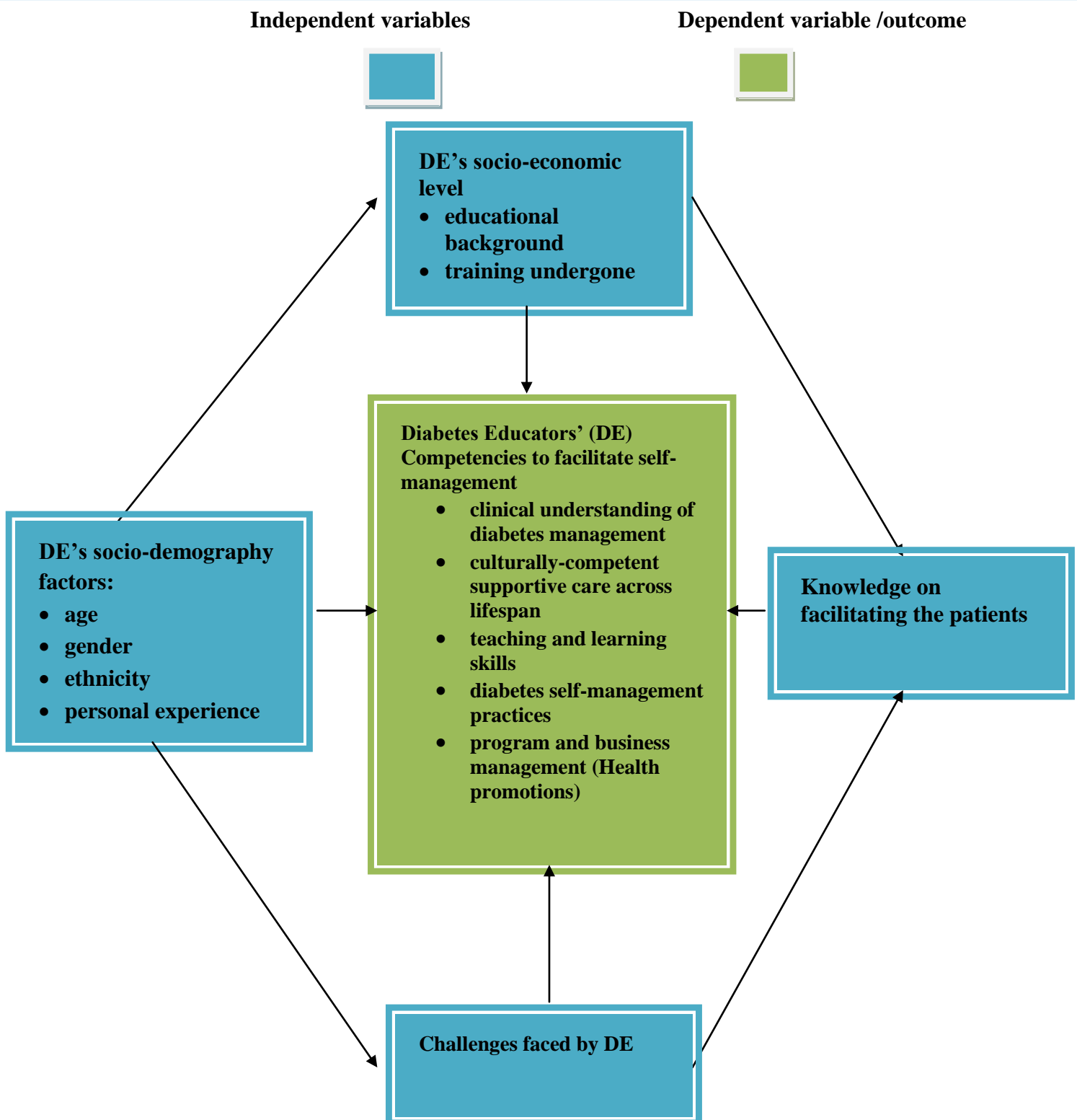


Figure 1: The independent and dependent variables in the study

3.0 Expected result:

The result of the study will yield useful information on the effectiveness of diabetes educators' competencies on the clinical understanding of diabetes management, culturally-

competent supportive care across the lifespan, teaching and learning skills, diabetes self-management practices, and health promotion and other programs. The study will also describe the challenges faced by the Diabetes Educators in their daily task. Implication for practice and suggestions for further research will be discussed further.

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Declaration

We hereby declare that the manuscript entitled "Diabetes Educators' Competencies in Facilitating Self-Management among Diabetic Patients in Malaysia" submitted by the undersigned represents valid work and that neither this manuscript nor one with substantial similarity with any other article under the present authorship has been published or is being considered for publication elsewhere.

Authors contribution

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