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Identifying the Need for Self-Management Education in Adult Patients with Type-2 Diabetes in Ho Chi Minh City, Vietnam

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IDENTIFYING THE NEED FOR SELF-MANAGEMENT
EDUCATION IN ADULT PATIENTS WITH
TYPE-2 DIABETES IN HO CHI MINH CITY,
VIETNAM

A Thesis Submitted in Partial Fulfillment
of the Requirements of the Degree of
Master of Science

Le Thi Minh Thu

College of Natural and Health Sciences
School of Nursing

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This thesis project by: Le Thi Minh Thu

Entitled: *Identifying The Need for Self-Management Education in Adult Patients with Type-2 Diabetes in Ho Chi Minh City, Vietnam*

Has been approved as meeting the requirement for the Degree of Master of Science in Nursing, College of Natural and Health Sciences, School of Nursing.

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ABSTRACT

Le Thi Minh Thu. *Identifying the Need for Self-Management Education in Adult Patients with Type-2 Diabetes in Ho Chi Minh City, Vietnam*. Unpublished Master of Science thesis, University of Northern Colorado, 2019.

The purpose of this thesis project was to identify the need for self-management through investigating the existing knowledge about diabetes self-care and their perception of diabetic control in adult patients with type-2 diabetes Ho Chi Minh City, Vietnam.

The 16-Item Diabetes Self Management Questionnaire (Schmitt et al., 2013) and a cross-sectional design was used in this study to explore the diabetes self management related to four subscales such as glucose management, dietary control, physical activity, health-care use and a sum scale as the perception of diabetic control among fifty five participants who were diagnosed with type-2 diabetes in Tan Phu District Hospital, Ho Chi Minh City.

The study found that the age of the participants ranged from 40 to 83 years old, and the average age was 62 years old with more female (65.5%) than male (34.5%). They all had formal schooling at least elementary level, and 27.4% had higher education level (university or higher). The majority of them were retired (65.5%). The participants were all diagnosed with type-2 diabetes and their diabetes duration ranged from 1 to 30 years. The findings showed that respondents' knowledge about diabetes self- management seemed overall to be sufficient since the mode of each item showed that they positively

understood and applied the facts which were appropriate for their diabetes self-care activities. Then, the last item included as an overall sum scale varied by the demographic characteristics to generally explore participants' perception of diabetic control. In general, the findings showed that most of the participants agreed that their diabetes self-care was not poor (34.5% male never believed that their diabetes self-care was poor, and the rest of 65.5% female rarely believed that their diabetes self-care was poor).

In conclusion, this study suggests that health professionals in Vietnam should use reliable and valid tools, such as this questionnaire from Schmitt et al. (2013), to have better understanding about patient's self-care. Health professionals can use this information to provide diabetic patients with a suitable health education program. In addition, more research related to diabetes self-care needs to be conducted to provide more evidence-based information to support patients with diabetes in Vietnam.

ACKNOWLEDGEMENTS

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CHAPTER I

INTRODUCTION

Background

Diabetes is one of the most dangerous non-communicable chronic diseases leading to severe complications such as stroke, heart disease or kidney failure which are life threatening. Lately, diabetes has become a worldwide problem and has been steadily on the rise. According to World Health Organization (WHO) Global Report, there were over 420 million diabetic adult patients in 2014 compared to about 100 million in 1980 (Roglic, 2016). Of the 420 million, approximately 90% have type-2 diabetes. Diabetes is rising faster in undeveloped and developing countries. It impacts patients' quality of life and their overall health as well as increases hospitalization time, treatment costs and even increases chances of death due to cardiovascular or renal diseases as the result of diabetes complications (WHO, 2014).

In Vietnam, diabetes was the seventh cause of death from non-communicable diseases in 2002 (WHO, 2008). Moreover, according to WHO (2008), the number of people with diabetes is growing at an alarming rate; it has almost doubled within the past 10 years. As a developing country, Vietnam also sees the number of people with diabetes rising. Currently, the estimated percentage of cases of diabetes is 5.5% among Vietnamese adults (WHO, 2014). Moreover, Vietnam is one of the low-income countries in the world with per-capita gross domestic product of around US$2310. There was about 60% of the population had health insurance (in 2010) which was not covering all

treatment cost. Therefore, the high costs of treating diabetes was considered as a big burden to patients and their families, especially with severe complications such as feet ulcers, cardiovascular disease, or kidney failure (Khue, 2015).

Problem Statement and Purpose

The Vietnam Ministry of Health launched many health initiatives to improve the healthcare system related to diabetes, such as detection and prevention of diabetes, as well as training programs on diabetes for healthcare providers and medical staff. However, those programs did not cover all of Vietnam (Baumann, Blobner, Van Binh, & Lan, 2006). Furthermore, the programs' content was not deeply focused on self-care training for diabetic patients. Generally, the discharge plan for diabetic patients includes some simple reminders of following the doctor's orders regarding the prescription medication and the follow-up schedule. Thus, it seems diabetic patients might not have enough knowledge and confidence about self-care to manage their health situation at home.

Research evidence shows that diabetes self-management education (DSME) can reduce diabetic complications and improve self-management, overall health of the patient and overall glycemic control (Dang, Deoisres, Keeratiyutawong, & Baumann, 2013; Dao, 2012; Williams, & Zeldman, 2002). Evidence from a research in 2011 on diabetic Vietnamese American patients in the United States showed that DSME was needed and desired among diabetic patients and that it could reduce diabetic complications and could improve patient's overall health (Truong et al., 2011).

It is, therefore, important that health education becomes one of the integral components of diabetes management and care. Health professionals need to access to

proven, effective, professional education and need to know patient's needs in order to provide a suitable health education to improve patients' health (Baumann et al., 2006). Thus, the purpose of this study is to identify the need for self-care training in adult patients with type-2 diabetes in a district hospital in Ho Chi Minh City, Vietnam.

Research Questions

Q1   What is the level of patients' existing knowledge about diabetes self-management such as glucose management, dietary control, physical activity, and health-care use?

Q2   To what extent does the patient's perception of diabetic control (Sum scale) vary by age, gender, educational level, and duration of diabetes?

Significance

Communication with patients is one of the basic skills of nurses. It includes listening, informing, explaining, guiding, and training in order to help patients understand their health status and ultimately comply with evidence-based practice in healthcare treatment. Necessary information related to the need of DSME from patients with type-2 diabetes could be: 1) home glucose monitoring; 2) diabetes complications; 3) physical exercises; 4) dietary recommendations; 5) prevention of complications (feet ulcers, blindness, kidney failure); 6) medications; 7) self care deficit, behaviors (Truong et al., 2011). Thus, the current study will explore the factors related to adult patients with type-2 diabetes in order to identify their need of diabetes self-management education. Findings from this study will provide information to base further research leading to improvement in diabetes self-management education in Vietnam.

Health education is one of the important parts of nursing care service. In order to provide a good training program, nurses need to use nursing process including six phases of the Stetler's model: (1) preparation, (2) validation, (3) comparative evaluation, (4)

decision making, (5) translation and application, and (6) evaluation to identify patients'

needs for self-care learning, which is as an important factor to take into account for

planning to meet the needs for DSME for diabetic patients (Stetler, 2001). These actions

show that nurses demonstrate critical thinking and decision making skills and are aware

of evidence based practice to contribute to improve patients/ health and their quality of

life (Stetler, 2001). In addition, more Vietnamese health professionals have been

following The Updated Diabetes Treatment Guidelines of 2019 from the American

Diabetes Association (ADA) which focuses on older adults, emphasizes the

personalization in diabetes management, and patient-centered care through self-

management education for diabetic patients (ADA, 2019).

Theoretical Framework

Orem's (1995) self-care theory has two strong concepts which are associated with

successful self-care. These are therapeutic self-care demand and self-care agency. In that,

evaluative activities of an individual are the action systems accomplished with a purpose

of determining what is to be achieved with respect to self-care; whereas, productive

activities are accomplished with the objective of meeting existing and known self-care

requirements by using particular technologies (Orem, 1979). Thus, Orem's self-care

model will be used to guide this study to identify the need of self care training in adult

patients with type-2 diabetes. Examining patients' understanding regarding their health

issues, and the benefits from a health education program will, hopefully, result in better

preparation of patients with diabetes to take care of themselves during and after

hospitalization. Therefore, the study will focus on patients' self-care deficit and self-care

demand in the Orem self-care model regarding their diabetes to identify the need for
DSME.
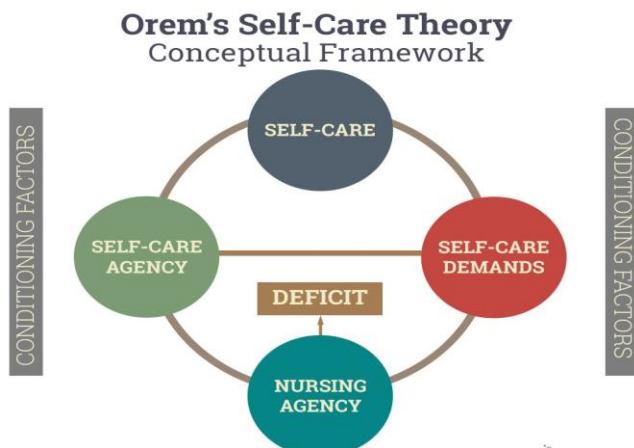
Figure 1: Orem's Self-Care Theory - Conceptual Framework.
Adapted from Nurselabs.com, by Gonzalo, 2014.

Definition of Terms

The Elderly - as defined in the Vietnam Law are Vietnamese citizens aged full 60
or over (Ngoc, Barysheva, & Shpekht, 2016).

Diabetes - a chronic condition that is caused by an insufficient production of
insulin or the body's inability to process it (WHO, 2008).

Type-2 diabetes - a chronic condition of glucose metabolizing disorder. Instead of
converting sugar into energy, it stores in blood vessels and causes a variety of symptoms
(Joslin Diabetes Center, 2018).

Diabetes self-management education (DSME) - the training and learning process
of the basic knowledge, skill, and ability for diabetes self-care. This process combines the
needs, goals, and life experiences of the diabetic patient and is evidence-based directed.
(Funnell et al., 2008).

Therapeutic self-care demand - "the totality of self-care actions to be performed for some duration in order to meet known self-care requisites by using valid methods and related sets of actions and operations" (Gonzalo, 2014. Par. 3.8).

Self-care agency – "The human's ability or power to engage in self-care and is effected by basic conditioning factors"(Gonzalo, 2014. Par. 3.6).

Self-care deficit - To be deficient in knowledge regarding self-care skills and steps resulting in alack of self-care procedures in daily activities: eating, cleaning oneself, dressing, using a restroom etc (Keane & O'Toole, 2003).

Self-care behaviors - defined as complex behavioral actions which are combined into daily life (Gatt & Sammut, 2008).

Conclusion

With the increasing number of patients with type II diabetes in Vietnam, MOH has been encouraging and supporting the use of the American Diabetes Association (ADA) 2019 Standards of Medical Care in Diabetes in that patient-centered care. Personalization of diabetes management is the main target to manage and improve patients' health and quality of life (ADA, 2019). Nurses play a central role in providing self-care education not only in hospitals but also in community health care system. Among other things, nurses' responsibilities are understanding patients' needs, helping and taking care of diabetic patients, as well as preparing high-quality health education plans to teach patients how to take care of themselves after discharge are core nursing interventions.

CHAPTER II

LITERATURE REVIEW

The literature on self-care education among adult patients with Type 2 diabetes was searched using four data bases: CINAHL, MEDLINE, PubMed, Cochrane Library, Google Scholar with search terms such as: self-care education, self-care training for elderly, self home care for elderly, and diabetes self-management. The search yielded over 5,000 articles. In order to narrow down the results, some limiters were used including "full-text online." Several key terms were also introduced in the search: self-care for chronic diseases, diabetes self-monitoring, type-2 diabetic adult Vietnamese patients, "type-2 diabetes self management efficacy/demand", or "self home care for diabetic elders." After the restrictions were implemented, 20 articles were deemed relevant. These studies focused on the target adult population and were available in English. Some articles were excluded from this review because they were not pertinent to the population studied or not available online.

Based on the systematic review of 71 trials which had been compiled from reliable sources such as MEDLINE and HealthSTAR on self-management education, conducted by Warsi, Wang, LaValley, Avorn, and Solomon (2004), education played an important role in self-management and self-care for patients with chronic diseases such as diabetes, asthma, and heart disease. In the study, diabetic patients who were participated in self-management educational programs demonstrated a decrease of glycosylated

hemoglobin levels (summary effect size, 0.45; 95% confidence interval [CI], 0.17-0.74),

as well as improvements in systolic blood pressure (summary effect size, 0.20; 95% CI,

0.01-0.39). In addition, self-management education programs were shown to empower

patients, improve patients' outcomes of health and quality of life, and reduce health care

costs (Warsi et al., 2004).

Another systematic literature review on factors contributing to self-care among

type-2 diabetes patients (Abrahim, 2011) showed that self-care was correlated with many

aspects including age, gender, educational level, social support, income and duration of

disease. These demographic, socio-economic, and social support factors were also found

to be positive contributors to successful self-care abilities of Type 2 diabetes patients.

Orem's self-care theory was used in this study; it focused on therapeutic self-care

demand and self-care agency as contributing factors to successful self-care. This theory

supports the relationship between patients' ability to perform self-care related to their

health condition and the ability to perform daily self-care activities, practice, decision

making and behaviors to manage the disease and improve their health (Orem, 1991). The

outcomes of the aforementioned studies do align with the Orem's theory and emphasize

the relationship between the contributing factors to self-care and the quality of actual

self-care of patients with Type 2 diabetes.

The results of a randomized controlled trial of a family-oriented self-management

program designed to improve self-efficacy, glycemic control, and quality of life among Thai

individuals with type-2 diabetes showed that the intervention group improved significantly

in self-efficacy, self-management, outcome expectations, and diabetes knowledge

compared to the control group (Wichit, Mnatzaganian, Courtney, Schulz, & Johnson,

2017). This study included 140 patients with Type 2 diabetes, who had been recruited from a clinic in rural Thailand. The participants were randomly assigned to the intervention and control groups. Those in the intervention group received routine care and participated in a family-oriented program that included a training course, group discussions, home visits, and telephone follow-ups while those in the control group only received the routine care. The results of the study showed that the intervention group had significantly better self-efficacy, self-management, outcome expectations, and diabetes knowledge. The study also showed that the family support was associated with the improvement of patient health.

Dang et al. (2013) evaluated the effectiveness of diabetes self-management support intervention in adults with Type-2 diabetes at a general hospital in Ho Chi Minh City, Vietnam. The study showed a statistically significant improvement in diabetes social support, diabetes self-efficacy, diabetes self-care behaviors and blood sugar management in the intervention group at three and six months post-intervention. The researchers also focused on the support provided from peer leaders who had Type-2 diabetes and had good experience of control of blood glucose to share and help the participants. The participants in the experimental group and the peer leaders expressed satisfaction with the intervention and reported that the program was useful and meaningful to them. The data from the interview contained three themes: behavioral changes to be healthy, peer leaders as a motivating factor, and providing support to participants. This study also showed that peer leaders could work well with health care providers to give advice and informational support regarding self-management to other Type 2 diabetes patients.

Similarly, Dao (2012) investigated factors that might have been impacting diabetes self-management among adults with Type 2 diabetes in Vietnam. Specifically, the study aimed to identify contributing factors in diabetes self-management, and explore the demographic and health-related characteristics, diabetes knowledge, belief in treatment effectiveness, family and friends' support and health care providers' support among adults with Type 2 diabetes in Cho Ray Hospital, Ho Chi Minh City. The data were collected via a cross-sectional survey. The researcher utilized convenience sampling and included 198 adults with Type 2 diabetes. The participants were interviewed after giving an informed consent. The author used descriptive statistics, simple correlation statistics and structural equation modeling statistics to analyze the data. According to the results of the cross-sectional survey, adults with Type 2 diabetes in Vietnam had limited knowledge of the disease (the range of scores was from 1 to 11 out of a possible maximum score of 14) since only 52.5% of the participants were able to answer the questions correctly. The majority of the study participants (72.7%) believed that performing diabetes self-management activities was very important or extremely important for controlling their blood glucose levels and for preventing complications from diabetes. Diabetes knowledge, and family and friends' support also indirectly influenced diabetes self-management among these people through their belief in treatment effectiveness and their diabetes management self-efficacy ($p<.05$). Findings from this study suggested that it was necessary to provide diabetes self-management support for adults with Type-2 diabetes and also that the involvement of family and friends into diabetes self-management programs should be considered in Vietnam (Dao, 2012).

Likewise, Wu et al. (2011) studied adult outpatients in Taipei (n=145). The study was a quasi-experimental research, designed to test the hypothesis that people who received a self-management intervention had improved health-related quality of life and improved psychosocial well-being than those who did not. Both control and intervention groups received a standard diabetic educational program; the intervention group received the following additional interventions: (1) a diabetic booklet (2) digital video disc (DVD) viewing (3) counseling sessions (4) and telephone follow-up. The study was conducted in an outpatient clinic of a municipal hospital in Taipei. The ppatients' ages were 30 and older. They had Type-2 diabetes. Additionally, the participants were on an oral medication regiment. They completed a six-month post-treatment assessment (72 in the intervention group and 73 in the control group). The results of The Medical Outcomes Study Social Support Survey (Sherbourne & Stewart, 1991) indicated that the social support scores were significantly higher in the intervention group after three and six months of the intervention compared with the control group (p < 0·01), while the health-related quality of life and depression were not significantly different. In this study, social support from peer-group members was one resource for building self-efficacy. However, the study was limited by a non-double blind design and response bias due to self-report nature of the data.

Another study conducted in Italy aimed at translating the English version of Type-2 Diabetes Management Self-efficacy Scale to Italian and analyzing its psychometric properties (Messina, Rucci, Sturt, Mancini, & Fantini, 2018). This cross-sectional study involved 110 people with Type-2 diabetes from the San Marino State Hospital. The researchers were interested in measuring diabetes distress, psychological well-being, and

depression of the participants. The findings indicated that 62.7% of the patients had no depressive symptoms, 51.2% of patients had diabetes distress, and 74.2% of patients had good psychological well-being. According to the study, two main subscales of disease management and lifestyle management which had good reliability (α =.849 and .900). The research outcomes demonstrated sufficient evidence of high validity and reliability of the instrument even when translated in Italian. Additionally, the study seemed to have validated that the scale was effective in monitoring self-care routines of patients with Type 2 diabetes for an extended period of time.

Similar to the aforementioned research, Hunt et al. (2012) studied the relationships between self-efficacy, social support, social problem solving, and diabetes self-management behaviors in people living with Type 2 diabetes in rural Alabama, USA. This study utilized a cross-sectional, descriptive correlational design and collected data from 152 participants with Type 2 diabetes. The selection of the participants was based on convenience sampling strategies. The research findings pointed out to self-efficacy being a core component in diabetes self-management practices. However, the impact of social support strategies on diabetes self-management was found to be different among male versus female participants. Additionally, social support and social problem-solving were significantly correlated to the success of diabetes self-management among male participants. The study established that varieties of social assistance programs were negatively associated with the management of Type 2 diabetes. However, the study had some limitations such as the use of a convenience sample which limits generalizability of findings; potential participants who might have had a more severe case of Type 2 diabetes, but did not want to participate in the survey limited the ability to generalize

findings to that population. The study also suggested that nurses could assist patients to improve self-efficacy for diabetes self-management by encouraging participation in decision-making about their care, educating them about their condition, motivating to adopt healthy behaviors, and teaching to know when to seek help from healthcare providers (Hunt et al., 2012).

Similar to Hunt et al. (2012), Truong et al. (2011) explored the diabetes self management education (DSME) needs but of a Vietnamese diabetic population (50 participants from 4 primary care offices) in Oklahoma City and determined preferred ways to educate this population. The survey tools contained three areas of focus: (1) patient demographics and diabetes history, (2) previous and desired DSME, and (3) patient beliefs. However, the reliability and validity of the survey instrument was not tested, so this could be identified as a limitation. The researchers claim that participants had been informed of potential complications to their diabetes-management routines such as their monitoring their blood sugar and day-to-day practices, which could impact their overall health. Over 80% of participants requested more training in DSME except those regarding smoking risk in diabetes; all participants who were Vietnamese Americans suggested that it would be better if this training had been delivered in Vietnamese at a suitable literacy level.

Additional research conducted in relation to specific training techniques was focused on tools for diabetes self-management education (Schmitt et al., 2013). The researchers developed the Diabetes Self-Management Questionnaire (DSMQ) to assess self-care activities, which could predict blood glucose control. The study instrument consisted of multiple subscales, which measured the management of caloric intake and levels of blood

sugar as well the level of physical activity and the frequency of wellness checks. Both studies secured written consent from the participants. The pilot study resulted in eliminating several items from the questionnaire for the second attempt, which resulted in validating the 16 items of the instrument pertaining to self-care behavior and blood glucose control. The items showed appropriate characteristics (mean item-total-correlation: 0.46 ± 0.12; mean correlation with HbA1c: -0.23 ± 0.09). In general, internal consistency was high (0.84), consistencies of the subscales were acceptable (glucose management: 0.77; dietary control: 0.77; physical activity: 0.76; health care use: 0.60). Additionally, the confirmatory factor analysis showed that the four-factor model was an appropriate model. Both the DSMQ and the Summary of Diabetes Self-Care Activities Measure (SDSCA) scales were positively correlated. Thus, the study questionnaire could be used as a diagnostic tool to identify what potential obstacles prevent consistent blood sugar monitoring in patients with Type 2 diabetes. Finally, the DSMQ scale could provide relevant data for future studies on diabetes. One possible limitation of the research, however, is lack of generalizability of the findings. The results of the study might have indicated no correlation or a different level of correlation between the two scales had the participants been taking diabetes medication.

In summary, diabetes self management education is necessary for diabetic patients (Dao, 2012; Truong et al., 2011; Warsi et al., 2004); it can help improve patients' health related to quality of life (Wu et al., 2011) and better control their disease, especially self efficacy, diabetes knowledge and self-care skills (Abrahim, 2011; Hunt et al., 2012; McBain et al., 2016; Wichit et al., 2017). Through these studies, the development of the tools, questionnaires or instruments were introduced and described

(Messina et al., 2018; Schmitt et al., 2013; Truong et al., 2011); these studies would be good sources for further research. Social and family support were important factors that influenced diabetes self management (Dao, 2012; Wichit et al., 2017). In addition, the support from peer groups or peer leaders was also recommended as a good source for the improvement of self-efficacy and self-management (Dang et al., 2013; Wu et al., 2011).

CHAPTER III

DESIGN AND METHODOLOGY

Introduction

This chapter will briefly describe the proposed study methods, including the research setting, sample, and instrument. A cross-sectional design and convenience sample were used to implement the research. The establishment of the validity of the Diabetes Self Management Questionnaire (Schmitt et al., 2013) instrument following the translation process will be described in this chapter. This chapter will describe the plan for data collection and the proposed analysis. Finally, ethical considerations will be discussed, a consent form will be provided to ensure patients' safety and confidentiality of any personal data.

Research Design

This study used a cross-sectional design that was aimed at exploring the factors related to the need for diabetes self-management education among adults with type-2 diabetes in Ho Chi Minh City in Vietnam. Cross-sectional studies are known as descriptive research, in which researchers collect data to describe the characteristics that exist in the study population. Using this design does not either take much time or cost much money. This cross-sectional design allowed the researcher to describe the study variables at a specific point of time. The data is often collected from participants' self-reports on different variables which can show how differences in demographic characteristics (age, gender,

educational status). The study information is often used as primary source to support further studies and research (Cherry, 2018).

Research Setting

The Nursing department at Hong Bang International University (HIU) supported the study by choosing a clinical setting for implementing this research. The setting was the general medical department and the out-patient department at Tan Phu District Hospital in Ho Chi Minh City.

Research Sample

The planned sample size was fifty participants, with an additional five participants (10%) recruited to guard against potential missing data. The inclusion criteria for the participants were as follows: Vietnamese adults who were eighteen years of age or older diagnosed with Type-2 diabetes for at least 6 months, and who were able to give an informed consent and were willing to participate in this study. Exclusion criteria for participants consisted of the following: less than eighteen years old; diagnosed with type-2 diabetes less than 6 months; too sick to complete the study participation or refused to participate in this study.

Study Instrument

The instrument that was used in this study is The Diabetes Self Management Questionnaire (DSMQ) which was developed and evaluated through the research conducted by Schmitt et al., (2013). This questionnaire used a four-point Likert Scale to skip the neutral option and focus on the specific response. This questionnaire was tested for reliability and validity with 261 patients. Cronbach's Alpha was used to analyze the items. The estimated Cronbach's Alpha was 0.77 for 'Glucose Management', 0.77 for 'Dietary

Control', 0.76 for 'Physical Activity' and 0.60 for 'Health-Care Use'. For the 'Sum Scale' an α coefficient of 0.84 was observed (Schmitt et al., 2013). The questionnaire had 16 items under four subscales. Subscale reliability was also determined as 'Glucose Management' (GM), 'Dietary Control' (DC), 'Physical Activity' (PA), and 'Health-Care Use' (HU), and one additional item (last item) was included as the sum scale (Schmitt et al., 2013).

Pilot Testing

This questionnaire was translated into Vietnamese and then translated back into English. The two English versions were checked, and compared. There was very little difference identified between the original and translated English versions. This process was used to test the translation for equivalence and clarity. However, in order to make the questionnaire and the answer options to be understood more easily for Vietnamese participants, the answer options were slightly modified from the original options. They were similar in meaning, and read as "This is always true for me; This is sometimes true for me; This is rarely true for me; This is never true for me" instead of " Applies to me very much; Applies to me to a consider-able degree; Applies to me to some degree; Does not apply to me."

A pilot test with five participants included one male and four females. After a short introduction and explanation regarding the questionnaire, all participants agreed to participate and independently answered each statement in the questionnaire. The participants' ages were 57, 66, 69, 83, and 87 (mean: 72.4). Time to completion in minutes was as follows: 3:45; 4:02; 4:10; 4:20; 6:05 (mean: 4:32 minutes).

For the three older participants who had bad vision, the researcher read the statements for them to answer. For the oldest participant, her 24/7 care giver helped her with some answers such as regarding checking blood sugar with care and attention and recording blood sugar levels regularly.

In general, all participants understood each statement on the questionnaire. Some questions were answered when additional explanations were offered, such as for Item 1 and Item 6. The participants did not check their blood sugar by themselves, but it was done by the care giver at home or at the clinic when they went for the follow up appointment. For Item 8, the participants reported doing physical activities as much as they could, depending on their health status and muscle strength. Finally, for Item 14, the participants stated that they were not the ones who could decide when to go see the doctor; they just complied with the doctor's orders regarding the follow-up appointment schedule.

Data Collection

The dean of HIU Nursing Department worked with the training department and the nursing office at Tan Phu District Hospital - a district general hospital in Ho Chi Minh City - to obtain permission for the researcher to collect data for this study. The proposed setting for this work was the general medical department and out patient department at this hospital. With the informed permission from the director of Tan Phu District Hospital (appendix C), the researcher met with the department heads first and then with the participants to introduce the purpose and content of the study to seek their consent. After consenting, the participants completed the 16-item questionnaire. Study

participation included completion of the questionnaire. The completion of the questionnaire took approximately ten minutes.

Ethical Considerations

This study did not use any invasive procedures or harmful materials. An informed consent form with all related information was provided to ensure that the participants understood the study purpose, content, and what they were expected to do (Appendix B). All information about participants' responses in the study has been kept and stored confidentially. Participants' personal information was not collected; only group data has been reported. This study proposal has met all requirements and got the approval from The Institutional Review Board -IRB. (Appendix D).

Data Analysis

The first stage was the analysis and computation of the descriptive statistics and the distribution of the data for each variable. The second stage of the data analysis was to describe the association of each variable. A type I error of five percent was used for all tests of statistical significance.

The Microsoft Office Excel has been used to analyze the data. The data was analyzed to answer the research questions regarding (1) the level of patients' existing knowledge about diabetes self-management, and (2) if patients' existing knowledge influences their need for diabetes self-management education. Descriptive statistics such as percentages, and frequencies were used to describe the demographic characteristics of the study sample and the self-management characteristics in four subscales: 'Glucose Management' (GM), 'Dietary Control' (DC), 'Physical Activity' (PA), and 'Health-Care

Use' (HU), and one additional item (last item) was included as the sum scale (Schmitt et al., 2013).

The correlation was computed among the four subscale scores and the demographic characteristics (age, gender, duration of diabetes, education level). Exploratory data analysis procedures were conducted as appropriate to the level of the data collected. Cronbach's Alpha was computed for the subscales and total instrument.

Conclusion

This chapter described the research design, research setting, sampling criteria, and sampling method. In order to achieve the research objectives, a cross-sectional design and a convenience sampling method were implemented. Then, chapter also explained the data collection procedure and the proposed data analysis methods.

Since there was no valid and reliable Vietnamese instrument to measure study variables, the translation process from English to Vietnamese of an available valid and reliable instrument and its pilot test were described in detail. This chapter also presented the ethical consideration section and stated concerns about health and safety issues related to the implementation of this research.

CHAPTER IV

RESULTS

Introduction

This study aimed to identify the need for self-care training in adult patients with type-2 diabetes in Ho Chi Minh City, Vietnam. This chapter presents the study's findings as well as the data analysis. Section one of this chapter includes the analysis of the data and some descriptive statistics as well as the distribution of the data for each variable. The second section of the data analysis describes the findings. Type I error of five percent was used for all tests of statistical significance.

The data was analyzed to answer the research questions regarding (1) the patients' level of knowledge regarding diabetes self-management (glucose management, dietary control, physical activity, and health-care use) and (2) the extent the patient's perception of diabetic control (Sum scale) varied by age, gender, educational level, and duration of diabetes. Descriptive statistics such as percentages, measures of central tendency frequencies were used to describe the demographic characteristics of the study sample and the self management characteristics.

The data were collected from 55 participants who were patients with type-2 diabetes at Tan Phu District Hospital in Ho Chi Minh City, which is a general hospital under the direct management of the Ho Chi Minh City Department of Health.

Demographic Characteristics

The participants for this study included 19 in-patients from the general medical department and 36 from the out-patient department. There were more female (65.5%) than male (34.5%) participants. Their age ranged from 40 to 83 years old (M = 61.5), with 74.5% were over 55 years old. The participants' education level was 29% at elementary level; 43.6% had high school diplomas; and 27.4% possessed a university degree. 34.5% of participants had had type-2 diabetes for less than 5 years; other 34.5% had had the disease for 5-10 years; and 31% had been suffering from diabetes for over 10 years (Table 1). Most participants were retired (65.5%), 31% were employed, and only 3.5% were unemployed.

Table 1

Demographic characteristics of the study sample

Category variables	Categories	Number	%
Age (years)	18-55	14	25.5
	>55	41	74.5
Gender	Male	19	34.5
	Female	36	65.5
Diabetes duration (years)	<5	19	34.5
	5-10	19	34.5
	>10	17	31
Educational level	Elementary	16	29
	High school	24	43.6
	University or higher	15	27.4
Employment	Employed	17	31
	Unemployed	2	3.5
	Retired	36	65.5

N = 55

Diabetes Self-Management Characteristics

In response to research question one "What is the level of patients' existing knowledge about diabetes self-management such as glucose management, dietary control, physical activity, and health-care use?" descriptive analysis of the self-management characteristics was conducted. The questionnaire included 16 items belonging to four subscales which were 'Glucose Management' (GM), 'Dietary Control' (DC), 'Physical Activity' (PA), and 'Health-Care Use' (HU), and one additional item (last item) was included as the sum scale (Schmitt et al., 2013). There were eight items (1, 2, 3, 4, 6, 8, 9, 14) written with a positive meaning and the other eight items (5, 7, 10, 11, 12, 13, 15, 16) with a negative meaning as different ways in order to check the true value of participants' diabetes self-management (Table 2).

The findings in Table 2 showed that respondents' knowledge about glucose management seemed overall to be sufficient since the mode of each item showed that they positively understood and applied the facts which were good for their glucose management such as "check blood sugar with care and attention", "take medicine as prescribed", "record blood sugar levels regularly." With the items that were written with a negative meaning such as "I do not check my blood sugar level frequently enough", or "I tend to forget or skip my diabetes medicine", participants also had responses that were well matched to the items written with a positive meaning. This showed that they understood the glucose management content.

As shown above, the findings regarding respondents' knowledge about dietary control, physical activity and health-care were reported and well matched between the items with positive and negative meanings. This showed most of the participants have

understood which activities was good or not for them to apply. As to the physical activity

section, most participants agreed that they sometimes exercised, and sometimes avoided

or skipped physical activity even though they knew it was good for their health and

diabetes self-care. However, in general, most of the participants agreed that their diabetes

self-care was not that poor (Table 2).

Table 2

Diabetes Self Management Characteristics of the Study Sample (N = 55)

Category/sub scale	Item	Mode	Range of score
Glucose management	1	3	1-3
	4	3	1-3
	6	2	0-3
	10	0	0-3
	12	0	0-3
Dietary control	2	3	1-3
	5	2	0-3
	9	3	1-3
	13	1	0-3
Physical Activity	8	2	0-3
	11	2	0-3
	15	2	0-3
Health-Care Use	3	3	1-3
	7	0	0-3
	14	3	1-3
Sum scale	16	1	0-3

The response options for each item:
(3 points): This is always true for me
(2 points): This is sometimes true for me
(1 point): This is rarely true for me
(0 point): This is never true for me

Patient's Perception of Diabetic Control

The data of the sum scale, which accounted for variations in age, gender,

educational level, employment and duration of diabetes (Table 3), showed the

participants' perception of diabetic control. Generally, participants were quite confident

with their diabetes self-care. The data showed that the participants who had high

education (university or higher) believed that their self-care was never poor. Male

participants in this study also expressed high certainty regarding their self-care practices.

The participants who had been diagnosed with type-2 diabetes 5 years prior only

sometimes thought that their self-care was poor. Additionally, whether employed,

unemployed or retired, most of participants rarely thought that their self-care was poor.

Table 3
Sum scale - item 16: My diabetes self-care is poor.
Patient's perception of diabetic control (N = 55)

Demographic characteristics	Categories	Mode
Age (years)	18-55	1
	>55	1
Gender	Male	0
	Female	1
Diabetes duration (years)	<5	1
	5-10	2
	>10	2
Educational level	Elementary	1
	High school	2
	University or higher	0
Employment	Employed	1
	Unemployed	*
	Retired	1

* There were 2 unemployed participants, so there was no mode.

Instrument Reliability

A reliability test was conducted since this questionnaire was firstly translated into Vietnamese and used in Vietnam. Thus, Cronbach's Alpha statistic was determined using the 16 items of the scale (Schmitt et al., 2013). Eight of the items were positively score, and the scores for the eight negatively worded items were reversed for the calculation of reliability. Overall, the Cronbach's α used to test the consistency and reliability of the Vietnamese version of the questionnaire was 0.85, as well as Cronbach's α coefficients of the individual subscales were over 0.8 which met the requirement of at least 0.7 (Field, 2013).

Table 4

Total item Cronbach's Alpha statistics (with reversed scores of 8 items in blue)

Category/sub scale	Item	Mode	Cronbach's Alpha
Glucose management	1	3	0.87
	4	3	0.87
	6	2	0.87
	10	3	0.87
	12	3	0.87
Dietary control	2	3	0.87
	5	1	0.89
	9	3	0.88
	13	2	0.88
Physical Activity	8	2	0.88
	11	1	0.88
	15	1	0.87
Health-Care Use	3	3	0.87
	7	3	0.87
	14	3	0.88
Sum scale	16	2	0.87

N = 55

In summary, this study investigated the demographic characteristics, participants' existing knowledge about diabetes self-care/management and generally explored their perception of diabetic control in adult patients with type-2 diabetes in a district hospital in Ho Chi Minh City, Vietnam. There were 55 adults with type-2 diabetes who met the study criteria and agreed to participate in this study. The study found that the age of participants ranged from 40 to 83 years old, and the average age was 62 years old with more female (65.5%) than male (34.5%). They all had formal schooling at least elementary level, especially, there was 27.4% had high education level (university or higher). The majority of them were retired (65.5%). Participants were diagnosed with type-2 diabetes and their diabetes duration ranged from 1 to 30 years. The range of duration of diabetes was from 1 year to 30 years. The study also explored the participants' existing knowledge about diabetes self-care/management through their responses to each item in four subscales which were glucose management; dietary control, physical activity, and health-care use (Schmitt et al., 2013). Then, the last item was included as as an overall sum scale varied by the demographic characteristics to generally explore participants' perception of diabetic control.

CHAPTER V

DISCUSSION

This study was an exploration of factors and information regarding diabetes self-care/management among adults with type-2 diabetes in the study population in a district hospital in Ho Chi Minh City, Vietnam. This chapter discussed the factors related to the research questions such as the participants' existing knowledge about diabetes self-care, and the demographic characteristics related to overall perception of diabetic control, and how the Orem's Self-Care Theory influenced on this study. In addition, this chapter also presents the strengths, limitations, and implications generated from the findings.

Demographic Characteristics

The findings from this study had some similar demographic factors about age, education level, and employment status to previous studies. This study was conducted on 55 Vietnamese adults with type-2 diabetes. Its findings showed that there were more female (65.5%) than male (34.5%). The average age of participants was 62 years old, over 55 years old (74.5%), had elementary to high school education level (72.6%), were diagnosed with type-2 diabetes for less than 10 years (69%), other 31% suffering from diabetes for over 10 years. Most of participants were retired (65.5%), 31% were employed, and only 3.5% were unemployed (see table 1). There were some other research which had the same demographic characteristics, like the one conducted by Truong et al. (2011) on 50 Vietnamese American adults with both type-1 and type-2

diabetes whose average age was 62.7, with 52% female. However, in Truong et al. (2011), 62% had not finished high school. Another study conducted by Dao (2012) on adults with type-2 diabetes in Vietnam reported that the mean age of participants was 59, and the majority of them was female (61.1%), 53% of them were not working (retired or unemployed). The demographic characteristics from previous studies conducted by Truong et al. (2011) and Dao (2012) provided more contributive factors to diabetes self-management such as marital status, income, insurance availability, medical history, health behaviors (smoking, drinking), etc (Dao, 2012; Truong et al., 2011).

Diabetes Self-Management and Perception of Diabetic Control

This study used the reliable and valid questionnaire with 16 items developed by Schmitt et al. (2013) to assess participants' diabetes self-management associated with glucose control through the four subscales such as glucose management, dietary control, physical activity and heal-care use (Schmitt et al., 2013). The findings from this study showed that the frequency of response option that most participants agreed was to comply with and apply all activities that were good for their diabetes management. General, the frequency of their response to the sum scale showed that their diabetes management was not really poor. With the reliability and validity that this tool was tested to meet the requirement, this 16-item questionnaire was used again in another study in 2016 to analyze behavioral problems related to reduce glucose control (Schmitt et al., 2016).

This study focused on measuring diabetes self-care focusing on activities to help control blood glucose, and did not examine other ways of encouraging good self-care such as getting support from peer leaders, such as the randomized control pre - post test

design study conducted by Dang et al., (2013). Similarly, Wichit et al. (2017) explored

the effectiveness of a family oriented self-management program to improve diabetic

control; these types of program are not yet in place in Vietnam.

Instrument Reliability

Both versions of this 16-item questionnaire (English and Vietnamese) have been

tested for reliability and validity with the reversed scores of some items which were written

with negative meaning (item 5, 7, 10, 11, 12, 13, 15, 16). Then, Cronbach's Alpha was used

to analyze the subscales and sum scale. The estimated Cronbach's Alpha statistics were

compared between the original Schmitt et al. questionnaire and its translated version into

Vietnamese in Table 5.

Table 5
Comparison of Cronbach's Alpha Statistics between English and Vietnamese DSMQ.

Subscales	Original DSMQ (English version)	DSMQ (Vietnamese version)
Glucose Management	0.77	0.79
Dietary Control	0.77	0.69
Physical Activity	0.76	0.84
Health-Care Use	0.60	0.78
Sum Scale	0.84	0.87

Strengths

The questionnaire used in this study was a reliable and valid tool from established

research which provided information on diabetes self-care activities. The instrument

included well-defined specific self-care activities related to blood glucose control, and the

sum scale as general diabetes self-care (Schmitt et al., 2013). Moreover, this tool was translated into Vietnamese and tested with a pilot group to support the reliability of the translated version, as well as tested for the reliability with general Cronbach's Alpha coefficient of 0.85.

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Limitations

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The sample size of this study was limited to 55 participants who had been diagnosed with type-2 diabetes at a district hospital in Ho Chi Minh City; thus, it could not represent the entire diabetic population of Vietnam. In addition, some items on the questionnaires were written with negative meanings which could have confused some participants who at the first time did not read those items carefully.

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Application of Theoretical Framework

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Orem's self care model was used to guide this study (Orem, 1995). The findings provided a general picture of the existing knowledge of diabetes self care and the perception of diabetic control, which are consistent with self-care agency and self-care demands, in adult patients with type-2 diabetes. Examining patients' understanding and perception regarding their own health issues, and the benefits from a health education program will, hopefully, result in better preparation of patients with diabetes to take care of themselves during and after hospitalization.

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Implications for Practice

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As nurses are at the sharp end of patient care, nurses play a central role in providing self-care education not only in hospitals but also in community health care system to let patients and their families understand the most important points regarding to personal health care and quality of life that is self-implementation. This self-

implementation of diabetes self-care, self-management will gradually change the traditional culture, in that, children have to take care of their parents when they are sick which makes people rely on family members all the time. Therefore, a better understanding of patients' needs will help nurses in providing better care for diabetic patients, as well as preparing high-quality health education programs to teach patients how to take care of themselves after a hospital discharge.

The findings from this study may contribute relevant information which will be used by health professionals to assess patients' diabetes self-care and plan to provide patients with a suitable health education in Vietnam. These study findings suggest that nurses and other health professionals need to consider the assessment of diabetic patients thoroughly so that they can be supported more effectively. Moreover, it is necessary to have more research related to diabetes self-care/self-management to provide evidence based practice (Dang et al., 2013; Dao, 2012; Hunt et al., 2012; Truong et al., 2011).

Conclusion

With the increasing number of patients with type II diabetes in Vietnam, MOH has been encouraging and supporting the use of the American Diabetes Association 2019 Standards of Medical Care in Diabetes in that patient-centered care. Personalization of diabetes management is the main target to manage and improve patients' health and quality of life (ADA, 2019). Previous studies conducted in Vietnam also showed that the effectiveness of the diabetes self-management supported intervention for improving health outcomes in adults with type 2 diabetes (Dang et al., 2013; Dao, 2012). Another study found that higher self-management scores were associated with significantly decreased HbA1c levels and improved patient quality of life (Wichit et al., 2017).

Findings from this study suggest that health professionals in Vietnam should use reliable and valid tools, such as the questionnaire from Schmitt et al., (2013), to have better understanding about patient's self-care, so that they can have plan to provide diabetic patients with a suitable health education programs. In addition, more research related to diabetes self-care should be conducted to provide more information for evidence-based practice, and to support patients with diabetes in Vietnam.

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APPENDIX A

RESEARCH INSTRUMENT

DIABETES SELF MANAGEMENT QUESTIONNAIRE (SCHMITT ET AL, 2013)

Age ☐   Male ☐ Female ☐   How long have you had diabetes? ☐

What is your highest educational level? ☐

Employed ☐   Unemployed ☐   Retired ☐

The following statements describe self-care activities related to your diabetes. Thinking about your self-care over the last 8 weeks, please specify the extent to which each statement applies to you.	This is always true for me	This is sometimes true for me	This is rarely true for me	This is never true for me
1. I check my blood sugar levels with care and attention. ☐ Blood sugar measurement is not required as a part of my treatment.	☐	☐	☐	☐
2. The food I choose to eat makes it easy to achieve optimal blood sugar levels.	☐	☐	☐	☐
3. I keep all doctors' appointments recommended for my diabetes treatment.	☐	☐	☐	☐
4. I take my diabetes medication (e. g. insulin, tablets) as prescribed. ☐ Diabetes medication / insulin is not required as a part of my treatment.	☐	☐	☐	☐
5. Occasionally I eat lots of sweets or other foods rich in carbohydrates.	☐	☐	☐	☐
6. I record my blood sugar levels regularly (or analyze the value chart with my blood glucose meter). ☐ Blood sugar measurement is not required as a part of my treatment.	☐	☐	☐	☐
7. I tend to avoid diabetes-related doctors' appointments.	☐	☐	☐	☐
8. I do regular physical activity to achieve optimal blood sugar levels.	☐	☐	☐	☐
9. I strictly follow the dietary recommendations given by my doctor or diabetes specialist.	☐	☐	☐	☐
10. I do not check my blood sugar levels frequently enough as would be required for achieving good blood glucose control. ☐ Blood sugar measurement is not required as a part of my treatment.	☐	☐	☐	☐

11. I avoid physical activity, although it would improve my diabetes.	☐	☐	☐	☐
12. I tend to forget to take or skip my diabetes medication (e. g. insulin, tablets). ☐ Diabetes medication / insulin is not required as a part of my treatment.	☐	☐	☐	☐
13. Sometimes I have real 'food binges' (not triggered by hypoglycemia).	☐	☐	☐	☐
14. Regarding my diabetes care, I should see my medical practitioner(s) more often.	☐	☐	☐	☐
15. I tend to skip planned physical activity.	☐	☐	☐	☐
16. My diabetes self-care is poor.	☐	☐	☐	☐

KHẢ NĂNG TỰ CHĂM SÓC QUẢN LÝ BỆNH ĐÁI THÁO ĐƯỜNG (Schmitt et al., 2013)

Tuổi ☐ Nam ☐ Nữ ☐ Bị đái tháo đường bao lâu rồi ☐

Trình độ học vấn cao nhất ☐

Có việc làm ☐ Thất nghiệp ☐ Đã nghỉ hưu ☐

Các câu dưới đây mô tả các hoạt động tự chăm sóc liên quan đến bệnh đái tháo đường của ông/bà. Ông/bà hãy suy nghĩ, liên hệ đến cách mình tự chăm sóc bệnh đái tháo đường của mình trong vòng 8 tuần gần đây và chọn ra câu trả lời phù hợp nhất cho từng câu nói dưới đây (đánh dấu chéo vào ô vuông):	*Điều này luôn đúng với tôi*	*Điều này đôi khi đúng với tôi*	*Điều này hiếm khi đúng với tôi*	*Điều này không bao giờ đúng với tôi*
1. Tôi theo dõi và kiểm tra mức đường huyết của tôi cẩn thận. ☐ Việc điều trị bệnh của tôi không yêu cầu phải đo lường mức đường huyết.	☐	☐	☐	☐
2. Tôi chọn các thức ăn nhằm giúp đạt được mức đường huyết tốt nhất.	☐	☐	☐	☐
3. Tôi lưu giữ tất cả các khuyến cáo, dặn dò của bác sĩ qua các lần khám bệnh của tôi.	☐	☐	☐	☐
4. Tôi tuân thủ việc dùng thuốc (uống, tiêm insulin) theo toa bác sĩ. ☐ Việc điều trị bệnh của tôi không yêu cầu dùng thuốc.	☐	☐	☐	☐
5. Thỉnh thoảng tôi ăn nhiều đồ ngọt hay các thức ăn chứa nhiều bột đường.	☐	☐	☐	☐
6. Tôi lưu vào sổ mức đường huyết của mình thường xuyên (hay lập bảng trị số với máy đo đường huyết của mình). ☐ Việc điều trị bệnh của tôi không yêu cầu phải đo lường mức đường huyết.	☐	☐	☐	☐
7. Tôi hay né tránh các buổi hẹn khám bệnh đái tháo đường với bác sĩ.	☐	☐	☐	☐
8. Tôi thường xuyên tập các hoạt động thể lực nhằm giúp đạt được mức đường huyết tốt nhất.	☐	☐	☐	☐
9. Tôi nghiêm chỉnh làm theo các khuyến cáo về chế độ ăn kiêng của bác sĩ chuyên khoa.	☐	☐	☐	☐
10. Tôi không kiểm tra mức đường huyết đủ thường xuyên theo yêu cầu để có thể kiểm soát tốt đường huyết. ☐ Việc điều trị bệnh của tôi không yêu cầu phải đo lường mức đường huyết.	☐	☐	☐	☐
11. Tôi né tránh hoạt động thể lực dù biết việc đó giúp cải thiện bệnh của tôi.	☐	☐	☐	☐

12. Tôi hay quên dùng thuốc hay bỏ cữ thuốc (uống, tiêm insulin). ☐ Việc điều trị bệnh của tôi không yêu cầu dùng thuốc.	☐	☐	☐	☐
13. Thỉnh thoảng tôi có những 'bữa ăn uống vô độ' (không vì lý do hạ đường huyết).	☐	☐	☐	☐
14. Về việc chăm sóc bệnh của tôi, tôi cần đi khám thường xuyên hơn.	☐	☐	☐	☐
15. Tôi hay bỏ qua hoạt động thể lực đã được lập theo kế hoạch.	☐	☐	☐	☐
16. Khả năng tự chăm sóc bệnh đái tháo đường của tôi còn yếu kém.	☐	☐	☐	☐

APPENDIX B

CONSENT FORM

CONSENT FORM FOR HUMAN PARTICIPANTS IN RESEARCH

Project Title: Identify the Need for Self Management Education in Adult
Patients with Type-2 Diabetes in Ho Chi Minh City, Vietnam

Researcher: Thu Le (Le Thi Minh Thu) - student in the Advanced Nurse
Generalist-Master Program, Hongbang International University,
Vietnam (HIU) & University of Northern Colorado, USA (UNCO)

Phone: 0906336798   Email: le5746@bears.unco.edu;
mthuqut@gmail.com

Research advisor: Dr Jeanette Mc Neill, UNCO, jeanette.mcneill@unco.edu

        The purpose of this study is to identify the need for self-management education in adult patients with type-2 diabetes in Ho Chi Minh City, Vietnam. This study does not interfere with your usual diabetes treatment provided by your medical doctor or nurse and other health professionals. There are no risks associated with your participation in this study.

        You will be invited to participate in the study at a time convenient to you. If you agree, we will ask you to complete a 16-item survey which will take about 6 to 10 minutes of your time to complete. The questionnaire includes questions with a rating scale about your existing knowledge about diabetes self-management. Your responses to the questionnaire will be used to analyse the results of the study, therefore, the results may benefit people with diabetes by helping improve how doctors and nurses can support people to understand and manage their health problems better.

        You are free to choose not to take part in the survey. All information that is gained from this study will be treated as group data; no names will ever be used in connection with the study. The records of this study will be stored securely and kept private in the Hong Bang International Nursing Department. After three years, all data from the study will be destroyed.

The research team from the University of Norther Colorado and members of the Institutional Review Board has the legal rights to review your research records and will protect the confidentiality of those records to the extent permitted by law. All publications will exclude any information that will make it possible to identify you as a participant.

        Your participation is voluntary. You may decide not to participate in this study and if you begin by completing the survey, you may still decide to stop and withdraw at any time. Your decision will be respected and will not result in loss of benefits to which you are otherwise entitled. Having read the above and having the opportunity to ask any questions, please sign below if you agree to participate in this research. A copy of this form will be given to you to retain for future reference. If you have any concerns about your selection or treatment as a research participant, please contact Nicole Morse, Research Compliance Manager, Office of Research and Sponsored Programs, Kepner Hall, University of Northern Colorado,   Greeley, CO 80369, 970-351-1910.

If you have any question or require further information, please contact the researcher:

      Le Thi Minh Thu   Phone: 0906336798

      Email: le5746@bears.unco.edu; mthuqut@gmail.com

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Participant's Signature   Date

_____

Researcher's Signature   Date

GIẤY ĐỒNG Ý THAM GIA NGHIÊN CỨU

Đề tài: Nhận biết nhu cầu đào tạo về tự quản lý bệnh ở người bệnh đái
tháo đường   týp 2 tại Thành Phố Hồ Chí Minh, Việt Nam.
Người nghiên cứu: Lê Thị Minh Thư - Học viên Chương trình Thạc sĩ Điều dưỡng -
Đại học   Quốc tế Hồng Bàng, Việt Nam (HIU) & Đại học
Bắc Colorado, Mỹ   (UNCO)
Điện thoại: 0906336798   Email: mthuqut@gmail.com
Giáo viên hướng dẫn: Tiến sĩ Jeanette Mc Neill, UNCO

Mục đích của nghiên cứu này nhằm nhận biết nhu cầu đào tạo về tự quản lý bệnh đái tháo đường týp 2 thông qua việc tìm hiểu kiến thức hiện tại của người bệnh - Tp Hồ Chí Minh, Việt Nam.

Nghiên cứu này không ảnh hưởng hay gây trở ngại gì đến việc điều trị bệnh của người tham gia. Nếu quý vị chấp thuận tham gia nghiên cứu này, xin vui lòng dành chút thời gian (từ 6 đến 10 phút) để hoàn tất bộ câu hỏi nghiên cứu gồm 16 câu. Nội dung bộ câu hỏi xoay quanh các vấn đề liên quan đến kiến thức, hiểu biết của qúy vị về bệnh đái tháo đường týp 2 của mình. Thông tin phản hồi của nội dung này sẽ được tổng hợp, phân thích thành kết quả nghiên cứu để sẽ được sử dụng như tài liệu nguồn giúp cải thiện việc điều trị, chăm sóc và tự quản lý bệnh đái tháo đường týp 2.

Các thông tin cá nhân và dữ liệu thu thập sẽ được bảo mật theo đúng qui định của Trường Đại Học Quốc Tế Hồng Bàng và sự xem xét phê duyệt của Ban Thẩm định Trường Đại học Bắc Colorado, Mỹ. Sau ba năm, tất cả các dữ liệu liên quan đến nghiên cứu này sẽ được hủy theo quy định. Kể cả các công bố về nghiên cứu cũng sẽ ko6ng bao gồm thông tin cá nhân nào về người tham gia.

Việc tham gia nghiên cứu này là tự nguyện chứ không bắt buộc. Quý vị có thể dừng tham gia nghiên cứu bất cứ lúc nào, và quyết định của quý vị luôn được tôn trọng. Nếu quý vị đã nắm ác thông tin, mục đích về nghiên cứu và đồng ý tham gia, xin vui lòng ký tên xác nhận dưới đây. Nếu quý vị có thắc mắc gì liên quan đến nghiên cứu này thì có thể liên hệ Nicole Morse, trưởng phòng nghiên cứu, Kepner Hall, Đại Học Bắc Colorado, Greeley, CO 80369, 970-351-1910.

Hoặc có thể trực tiếp liên hệ người thực hiện nghiên cứu:

Lê Thị Minh Thư - Học viên Chương trình Thạc sĩ Điều dưỡng HIU-UNCO).

Phone: 0906336798   Email: mthuqut@gmail.com

_____

Người tham gia ký tên   Ngày

_____

Người thực hiện nghiên cứu   Ngày

APPENDIX C

HOSPITAL AGREEMENT

AGREEMENT FROM TAN PHU DISTRICT HOSPITAL

Translated version of English:

Letter of Recommendation

Re: Master Students' Research Implementation

To: The Director of Tan Phu Hospital

Nursing Office at Tan Phu Hospital

Hong Bang International University (HIU), Ho Chi Minh City has been implementing the first nursing master course which is a joint program with The University of Northern Colorado (UNCO), USA according to The Decision 50/QĐ-BGDĐT from Vietnam Ministry of Education and Training, signed on January 5th, 2017. We are in the last semester of the program - guiding master students in developing their thesis. This included choosing a practical research topic to literature review to planning and conducting research by working with potential participants to collect data for analysis and evaluation as the final step before graduation. The research results will be added to a source of reference for evidence based practice in the future.

With the strong relationship between Hong Bang International University and Tan Phu Hospital for many years, the board of directors and all staff at Tan Phu Hospital facilitate and support the students from HIU so that they can be successful in their clinical practice to contribute to improving nursing and health care in Vietnam. Thus, we would like to recommend two master students (as listed below) to Tan Phu Hospital to collect data for their research:

1. Le Thi Minh Thu

Research topic: Identify the need for self-management education in adult patients with type-2 diabetes

Method: Cross-sectional design

Sample size: 50 adult patients with type-2 diabetes

Instrument : 16-item Diabetes Self Management questionnaire (Schmitt et al, 2013)

2. Luu Tien Dat

Research topic: Assess the patients' satisfaction with waiting time at a district hospital

Method: Cross-sectional design

Sample size: 40 participants

Instrument: Questionnaire pertaining to wait time

Hong Bang International University is looking forward to receiving agreement from the director and the nursing office at Tan Phu Hospital. The master students ensure that participation in these researches will not affect patients' health and their treatment.

Respectfully yours,

Tan Phu Hospital   Hong Bang International University
Director signed (Dr. Dinh Thanh Hung)   Director signed (Dr. Ho Thanh Phong)
Date: February 14, 2019   Date: January 28, 2019

ORIGINAL VERSION OF THE AGREEMENT

ĐẠI HỌC QUỐC TẾ HỒNG BÀNG
KHOA ĐIỀU DƯỠNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

Tp. Hồ Chí Minh, ngày 28 tháng 1.năm 2019

GIẤY GIỚI THIỆU

THẠC SĨ ĐIỀU DƯỠNG LÀM ĐỀ TÀI NGHIÊN CỨU TẠI CƠ SỞ

Kính gửi: - Giám Đốc Bệnh Viện Tân Phú

   - Phòng Điều Dưỡng Bệnh Viện Tân Phú

Trường Đại Học Quốc Tế Hồng Bàng đang liên kết đào tạo thạc sĩ với Đại Học Bắc Colorado (University of Northern Colorado), USA theo quyết định 50/QĐ-BGDĐT ký ngày 5/1/2017 của Bộ Giáo Dục và Đào Tạo. Chương trình đang bước vào học kỳ cuối, các sinh viên được hướng dẫn làm đề tài nghiên cứu và từng bước trải nghiệm từ việc chọn các đề tài thực tế, đến tổng quan tài liệu, lập kế hoạch thực hiện đến tiếp cận đối tượng nghiên cứu để thu thập dữ liệu cho việc phân tích đánh giá.

Với mối quan hệ hợp tác tốt giữa Trường Đại Học Quốc Tế Hồng Bàng với ban lãnh đạo và các khoa phòng của Bệnh Viện Tân Phú luôn tạo điều kiện cho sinh viên của trường được học tập và thực hành tối ưu. Nay, Trường Đại Học Quốc Tế Hồng Bàng xin giới thiệu hai sinh viên thạc sĩ được phép đến Bệnh viện để thu thập dữ liệu cho đề tài nghiên cứu sẽ được thực hiện trong tháng 2 năm 2019.

1. Lê Thị Minh Thư

Đề tài: Xác định khả năng và nhu cầu đào tạo về tự quản lý bệnh ở người bệnh đái tháo đường típ 2.

Phương pháp: Nghiên cứu mô tả cắt ngang -   Cỡ mẫu: 33 đối tượng nghiên cứu là người bệnh đái tháo đường típ 2.

Công cụ: Bộ câu hỏi gồm 16 câu (Schmitt et al, 2013)

2. Lưu Tiến Đạt

Đề tài: Đánh giá sự hài lòng về thời gian chờ khám bệnh tại bệnh viện tuyến quận

Phương pháp: Nghiên cứu mô tả cắt ngang -   Cỡ mẫu: 40 đối tượng nghiên cứu
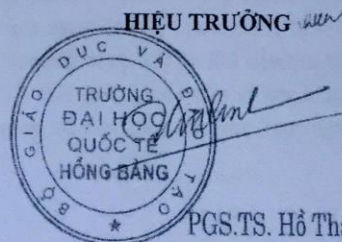
Công cụ: Bộ phiếu khảo sát thời gian khám chữa bệnh

Trường Đại Học Quốc Tế Hồng Bàng mong nhận được sự đồng ý của Ban Giám đốc và Phòng Điều Dưỡng Bệnh Viện Tân Phú. Sinh viên sẽ cam kết việc tham gia nghiên cứu không ảnh hưởng đến sức khỏe hay việc điều trị của đối tượng nghiên cứu.

Xin trân trọng cảm ơn!

Đính kèm:

- *Bản tóm tắt đề tài nghiên cứu*

- *Bộ công cụ nghiên cứu*

HIỆU TRƯỞNG

PGS.TS. Hồ Thanh Phong

APPENDIX D

INSTITUTIONAL REVIEW BOARD APPROVAL

UNIVERSITY OF
NORTHERN COLORADO

Institutional Review Board

DATE: April 15, 2019

TO: Thu Le
FROM: University of Northern Colorado (UNCO) IRB

PROJECT TITLE: [1406014-2] Identify the Need for Self Management Education In Adult
                    Patients with Type-2 Diabetes in Ho Chi Minh City, Vietnam.
SUBMISSION TYPE: Amendment/Modification

ACTION: APPROVAL/VERIFICATION OF EXEMPT STATUS
DECISION DATE: April 15, 2019
EXPIRATION DATE: April 15, 2023

Thank you for your submission of Amendment/Modification materials for this project. The University of
Northern Colorado (UNCO) IRB approves this project and verifies its status as EXEMPT according to
federal IRB regulations.

**Thank you for your extraordinary patience with the UNC IRB process. The protocols and materials
outlined in this amended/modified application are clear and thorough. Please note that all
identifiable data (e.g., signed consent forms) must be destroyed three years after the study is
complete. These revised protocols and materials are verified/approved exempt and you may begin
participant recruitment and data collection.**

Best wishes with this meaningful and relevant research.

Sincerely,

Dr. Megan Stellino, UNC IRB Co-Chair

We will retain a copy of this correspondence within our records for a duration of 4 years.

If you have any questions, please contact Nicole Morse at 970-351-1910 or nicole.morse@unco.edu.
Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within University of
Northern Colorado (UNCO) IRB's records.