

CHAPTER 1

INTRODUCTION

Background and Significance of the Problem

World Health Organization (WHO) stated that Indonesia is the fourth highest rank in numbers of diabetes sufferers after India, China, and USA. In 2000, Indonesians with diabetes were over 8 million, and in the next 30 years, the number will rise to be over 21 million (WHO, 2005). Indonesia Health Department indicated that the number of diabetes mellitus patients in outpatient and inpatient departments in hospitals rank the first for all endocrine problems (PdPersi, 2005).

From diabetes cases in global, type 2 diabetes is more common due to factors of genetic, high fat food consumption, sedentary lifestyle and obesity (Norris, 1996). The illness accounts for about 90% of all cases globally (WHO, 2005); whereas type 2 diabetics in Indonesia are around five millions (Wahyuni, 2006). Type 2 diabetes, in fact, is not only high prevalence, but also similarly to type 1 diabetes, causes short term complications, such as insulin shock, hypoglycemia, hyperglycemia (Bullock & Henze, 1999; Tamparo & Lewis, 2005), and long term complications, such as blindness, end stage renal disease, heart disease, and stroke (Hunt, Pugh, & Valenzuela, 1998).

In order to control the progression and the complications, the appropriate and adequate management for this disease must be taken. Diabetes management aims to eliminate symptoms, optimize metabolic parameters, and to prevent the chronic complications of diabetes (American Diabetes Association, 1998). The strategies include medication and lifestyle modification. Specifically for type 2 diabetes, since this type is commonly caused by a sedentary lifestyle, the management focuses on lifestyle modification, such as diet control and physical activity, antihyperglycemic drug (Hunt et al., 1998; Albarran, Ballesteros, Morales & Ortega, 2005), and stress management (Surwit et al., 2002). Moreover, in many cases, dietary modification is the only form of treatment required (McDowell & Gordon, 1996).

Nutritional health promoting behaviors is important as one strategy to improve the health status of type 2 diabetics, to control blood glucose level, and prevent the complications. However, it is not easy for type 2 diabetics to change their eating behavior in order to control their blood glucose level. Many previous studies have found failures in dietary control among type 2 diabetic

(Garay-Sevilla et al., 1995; Hunt et al., 1998; Keeratiyuwong, Hanucharurnkul, Boonchaay, Phumleng, & Muangkae, 2005; Albarran et al., 2005, Yannakoulia, 2006). The prevalence of non adherence for diet ranging from 35% to 75% (Cerkoney & Hart, 1980 as cited in Garay-Sevilla et al., 1995); there is no report related to the prevalence of poor compliance with diet regimen among Indonesians with type 2 diabetes. However, Wahyuni (2006) informed that poor eating behavior among Indonesians with type 2 diabetes are likely consuming high fat food and sweetened food.

Therefore, in order to control blood glucose efficiently in type 2 diabetes patients, health care personnel should know the patient's nutritional health promoting behaviors and the related factors. Previous studies have identified many factors affecting type 2 diabetes patients' dietary control, including demographic factors, such as gender (Singh, Wiegers & Goldstein, 2001; Lasky, Becerra, Boto, Otim & Ntambi, 2002; Legato et al., 2006), age, ethnicity (Wang, 1999), income and literacy level (Hunt et al., 1998), perceived benefits (Harris et al., 1982 as cited in Garay-Sevilla et al., 1995), perceived barriers (Lappalainen et al., 1997; Shultz, Sprague, Branen & Lambeth, 2001; Nagelkerk, Reick & Meengs, 2006), social support (Garay-Sevilla et al., 1995; Marzilli, n.d.; Wen, Parchman, & Shepherd, 2004, Albarran et al., 2005), personal motivation, understanding the meal plan, knowledge of what food to buy, and follow up meal planning session by dieticians (Travis, 1997). Whilst, Chansawang & Patchratchart (2002) revealed that activity related affect which is the subjective feeling occur prior to, during, and following the behaviors was the determinants of food control among diabetes patients in Songkhla Province, Thailand.

According to Pender's Health Promotion Model (HPM), nutritional health promoting behaviors as one dimension of health promoting behavior could be influenced by many factors such as personal factors, behavior specific cognition (perceived benefits-barrier, perceived self efficacy, activity related affect), and interpersonal influences. Of the HPM studies, perceived barriers, perceived benefits, and interpersonal influences: social support had been reported as significant determinants of health promoting behaviors. In addition, demographic factors are also contributing in affecting health promoting behaviors (Pender, Murdaugh, & Parsons, 2002). Therefore, perceived benefits, perceived barriers, social support, and demographic factors: age, gender, ethnicity, education level, income were selected for use in this study. They are considered modifiable variables to be used as a foundation for arranging interventions to promote nutritional

health behavior changes. In addition the widespread studies supporting the validity of these variables as correlates of healthy lifestyle behaviors.

So far, there are no known studies related to nutritional health promoting behaviors and the influencing factors among type 2 diabetes population in Indonesia. The existing studies have been developed from Western or other Asia regions. Therefore, to bridge the gap of the knowledge, it is important to explore nutritional health promoting behaviors and its influencing factors among type 2 diabetes patients in Indonesia. Knowing influencing factors of nutritional health promoting behaviors such as perceived benefits, perceived barriers, and social support would be important as data base; and beneficial in nutritional behaviors modification.

Objectives

1. To explore nutritional health promoting behaviors (NHPB) among type 2 diabetes patients.
2. To investigate whether perceived benefits of NHPB, perceived barriers of NHPB, and social support are predictors of NHPB among type 2 diabetes patients in the multiple regression model when controlling possible confounding factors.

Research Questions

1. What is the level of NHPB among type 2 diabetes patients?
2. Would perceived benefits of NHPB, perceived barriers of NHPB, and social support be predictors of NHPB in the multiple regression model when controlling possible confounding factors?

Theoretical Framework

Nutritional health promoting behaviors (NHPB) is one strategy in controlling blood glucose level in type 2 diabetes patients. Based on literature reviews, the behaviors can be categorized into 3 dimensions: (1) selecting healthy diet, (2) arranging meal plan, and (3) recognizing the amount of food calories (Tjokropawiro, 2006; Anderson et al., 2006).

However, to develop the behaviors among those patients could be affected by many factors. The factors influencing NHPB based on Pender's revised Health Promotion Model (HPM) include: (1) individual characteristics and experiences that consist of prior related

behaviors and personal factors, and (2) behavior specific cognitions and affect, including perceived benefits, perceived barriers, perceived self efficacy, activity related affect, interpersonal influences, and situational influences. All of these factors have direct and indirect effect on nutritional health promoting behaviors as one dimension of health promoting behaviors in this model.

Perceived benefits, perceived barriers, and social support which are variables in component of behavior specific cognitions and affect, were selected to be investigated if they could predict nutritional health promoting behaviors among type 2 diabetes patients in Indonesia.

Previous studies revealed that perceived benefits had positive association with healthy eating behaviors among type 2 diabetics (Garay-Sevilla et al., 1995); likewise, social support was positively related to healthy eating behaviors (Suwonnarop & Zauszniewski, 2002); whilst, perceived barriers was negatively associated with eating behaviors (Shultz, Sprague, Branen, & Lambeth, 2001).

In several previous studies, personal factors (such as: age, gender, education, income, and ethnic) have been reported as influencing factors of NHPB as well (Singh, Wiegers & Goldstein, 2001; Lasky, Becerra, Boto, Otim & Ntambi, 2002; Legato et al., 2006; Wang, 1999; Hunt et al., 1998). Therefore, they are included in this study as possible confounding factors of the association among perceived benefits, perceived barriers, and social support with NHPB. Figure 1 presents the scope of the study:

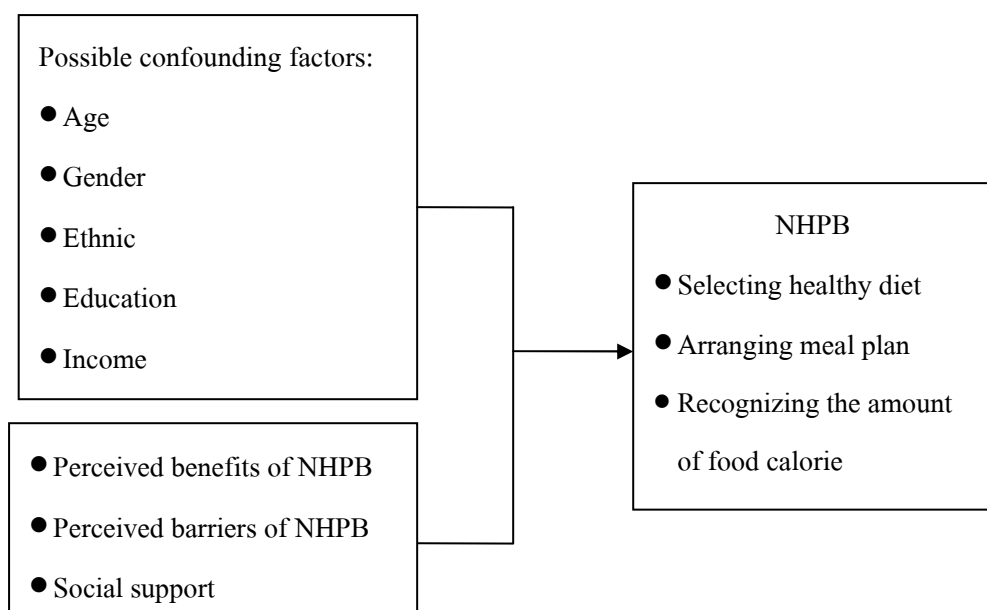


Figure 1. The study framework of NHPB and influencing factors in type 2 diabetes patients.

Hypothesis

Perceived benefits of NHPB, perceived barriers of NHPB, and social support can predict NHPB among type 2 diabetes patients in the multiple regression model where possible confounding factors such as age, gender, education, income, and ethnic are included.

Definition of Terms

Nutritional health promoting behaviors (NHPB) means actions taken by type 2 diabetes patients in selecting healthy diet as recommendation for diabetes people (such as: consume low fat, low glycemic index foods, and eating rich fiber foods), arranging appropriate meal plan (able to serve variety of foods, eating consistently in same time), and recognizing the amount of food calories (how much calorie in each meal that the subjects consumed); NHPB can be measured by Nutritional Health Promoting Behavior Questionnaire which was developed by investigator.

Perceived benefits of NHPB is the subject's perception or opinion about benefits of nutritional health promoting behaviors on diabetes control; it can be measured by the Perceived Benefits of NHPB Questionnaire which was developed by researcher.

Perceived barriers of NHPB means the subject's perception, belief or opinion about situations that inhibits nutritional health promoting behaviors. It can be measured by Perceived Barriers of NHPB Questionnaire which developed by researcher.

Social support is the subjects' perception of received support from family, friends, and health providers which facilitate the subjects' NHPB. It can be assessed by Modified Diabetes Social Support Questionnaire which was originally developed by La Greca & Bearman (2002).

Significance of the Study

1. This study provides valuable information for health professionals, particularly nurses by offering them a practical framework for promoting the nutritional healthy behaviors of type 2 diabetes patients.

2. The result of this study may be used as baseline data for further research related to nutritional health promoting behaviors and the particular influencing factors.