

CHAPTER 1

Introduction

This chapter presents the background and significance of the research problem, objectives of the study, research questions, scope of the study, and definition of terms.

Background and Significance of the Research Problem

Diabetes mellitus (DM) is identified as a major public health problem in the world (Danaei et al., 2011). Currently, 382 million people have diabetes and by 2035 this will increase to 592 million (International Diabetes Federation [IDF], 2013). All types of diabetes are in the increase, particularly, the number of people with type 2 diabetes mellitus (T2DM) is increasing rapidly worldwide (Ramachandran, Snehalatha, & Ma, 2013) and placing a considerable burden on health care services and suffers. T2DM is a metabolic disease characterized by hyperglycemia resulting from defects in insulin secretion, insulin action, or both (American Diabetes Association [ADA], 2013). The IDF estimated that T2DM was a major cause of premature disability and mortality in many countries (IDF, 2013). The increased prevalence of T2DM and its complications are seen in both developed and developing countries (Danaei et al., 2011). It is estimated that the prevalence of T2DM will almost double in the next 25 years and majority of them will be in developing countries (Allender et al., 2010). In most of the developing countries rapid economic development, mechanization (of

workplace and homes) and urbanization have led to changed lifestyles. The changed lifestyles are characterized by reduced physical activity and increased obesity. These two factors are the main reasons for the increase in the prevalence of T2DM in developing countries (Sicree, Shaw & Zimmet, 2006). According to a recent estimation by IDF, the South East Asia (SEA) region, consisting of India, Sri Lanka, Bangladesh, Bhutan, Mauritius and Maldives, has 72 million people or 8.2% of the adults have diabetes (IDF, 2013). In summary, it can be concluded that the prevalence of T2DM is drastically increasing in developing nations and the problem is very severe in South and South-East Asia regions.

The management goal for patients who are diagnosed with T2DM, is to control their glycemic levels to normal or near normal levels (fasting blood sugar levels [FBS] < 126 mg/dl or glycosylated hemoglobin concentration [HbA1c] <6.5%) (ADA, 2012). In order to achieve this goal, a number of studies have shown that diet control and regular physical activities/ exercise are the main behavioral changes that are required (ADA, 2012). In addition to diet control and regular physical activities/exercise behaviors, adherence to medication regimen also have been identified as important behaviors towards to successfully controlled glycemic levels among adults with T2DM (ADA, 2012). A chronic disease for which there is no cure, glycemic control behaviors are significant to maintain glucose levels consistent among adults with T2DM. If good glycemic control can be achieved and maintained, it has been proven to reduce or delay the incidence of complications among adults with T2DM.

Uncontrolled glycemic levels can cause a number of complications and socio-economic consequences which may negatively affect the individual, the family,

the society, and the health care system of the country. T2DM adults with uncontrolled glycemic level are at risk for a broad range of acute and chronic complications. As an acute complication, diabetic ketoacidosis (DKA) is a leading cause of death among adults with T2DM (Kitabchi, Umpierrez, Milles, & Fisher, 2009). Furthermore, uncontrolled glycemic levels significantly increase the risk of developing chronic macrovascular complications such as coronary heart disease, stroke and microvascular complications such as retinopathy, nephropathy, diabetes neuropathy and diabetic foot disease (Hawthorne, Robles, Cannings-John, & Edwards, 2008). These complications can have devastating long-term effects such as blindness, end-stage renal disease, amputation of limbs, neuropathy and heart disease (Bowers, Utz, Glick, & Harmon, 2010). All these complications contribute to the high morbidity and mortality associated with T2DM (ADA, 2012).

Socio-economic consequences of T2DM for individuals are many. Some economic burdens are due to the cost of medical care, their inability to do their daily jobs or due to dependence in daily living activities. As a result their quality of life will be severely reduced. In addition, patients with diabetes need to adopt many tasks to control their blood glucose levels. These measures require family support which may be an added burden for a family. The consequences of T2DM affect not only the individual and the family but also the health care system which is burdened by hospital costs and hospital care. The country too is burdened by the loss of productivity of an adult individual by death or disability. Costs of diabetic care are high and increasing worldwide (Ramachandran, Senehelatha, Shetty, & Nanditha, 2012). Especially in Sri Lanka, where health care is free for all in the state-funded hospitals and health care institutions, the burden of health costs due to diabetes and its

complications becomes significantly high. Therefore, glycemic control among patients with T2DM is very important to reduce the costs of medical care due to the disease as well as its subsequent complications.

In Sri Lanka, a developing country, there has been a significantly high prevalence of DM over the last few decades (Ministry of Health [MOH], 2007). The national prevalence of DM is 10.3% (Jayawardene et al., 2012). Ineffective glycemic control is known to lead to an increase in aforementioned diabetes related complications. Poor control of glycemic levels among adults with DM was observed in a study conducted in the Western province of Sri Lanka. In their study, 76.1% of the subjects had suboptimal control of diabetes with a mean fasting glucose level of 190 mg/dl (Pinideniyapathirage et al., 2011). The prevalence of complications among patients with DM is high in Sri Lanka. The prevalence of retinopathy among 204 adults with T2DM was 19.1% (Rajakumaraswamy, Rajapakse, & Fernando, 2008). Diabetes-related neuropathy among 528 patients with DM, including already diagnosed cases (330 adults) and newly diagnosed cases (198 adults), were 59.1% and 28.8% respectively (Katulanda et al., 2012). Nephropathy among 204 adults with T2DM was 78.5% (Rajakumaraswamy et al., 2008). A recent survey conducted in the Western province of Sri Lanka, also revealed that DM was significantly associated with high mortality which was not associated with hypertension, dyslipidemia, smoking and central obesity (Vithanage et al., 2011). Due to the high prevalence of DM and its complications, the Colombo South Teaching Hospital (CSTH), one of the teaching hospitals in Colombo district, provided care for around 32,341 patients with DM during the first 6 months of 2010 (Colombo South Teaching Hospital, 2010). In

summary the above facts confirm that in Sri Lanka, DM is a severe health problem which needs urgent intervention to prevent or delay the onset of complications.

However, most of the previous studies have assessed the prevalence of diabetes, complications of diabetes and poor glycemic control among diabetics in Sri Lanka relying on the biomedical aspects. The biomedical point of view is too narrow in scope to handle the complex nature of a chronic disease like diabetes. Hence different perspectives towards the disease are required in order to improve the outcomes (Block, 2006). In Sri Lanka, there is limited data available on how adults with T2DM control their glycemic levels. No data are available with regards to the diabetic patients' perspectives and the health care personnel's perspectives including barriers, reasons and suggestions to control glycemic levels among adults with T2DM. Therefore, the first phase of this study was planned to explore the current situation of glycemic control among adults with T2DM in a tertiary care hospital and a primary care unit. It assessed perception of barriers, reasons and suggestions related to glycemic control as perceived by adults with T2DM and health care personnel. A descriptive study with qualitative data collection methods is suitable to explore this phenomenon. This is because when little is known about phenomena, descriptive methodology is useful to gain more information about characteristics within a particular field of study (Burns & Grove, 2009).

Furthermore, a person's sociocultural context has been identified as an aspect which may potentially influence the way an individual chooses to self-manage their illness (Kleinman, 1980). Culture is a one of the many factors that T2DM adults negotiate to control his/her glycemic levels (Fleming, Carter, & Pettigrew, 2008). Thompson, Gifford, and Thorpe (2000) conducted an ethnographic study to explore

the influence of sociocultural context on food and physical activity on people living in urban areas. The study concluded that sociocultural influences should be considered in any public health interventions targeting food and physical activity behavior modifications among diabetics (Thompson et al., 2000). Moreover, the American Association of Diabetes Educators [AADE], (2012) highlighted that increasing the opportunities for successful outcomes for patients with diabetes will require thoughtful consideration of the sociocultural factors of the individual and the community in the designing and delivering of glycemic control interventions. This evidence highlights the importance of exploring the impact of different sociocultural context on the desired glycemic control behaviors in order to improve glycemic control among adults with T2DM.

Sri Lanka is a country which has unique cultural practices and beliefs. These culturally inherent beliefs towards T2DM among nations may affect the glycemic control behavior. However, there is not much evidence available about this phenomenon. It is argued here that without much understanding of the impact of the sociocultural context on glycemic control behaviors among adults with T2DM, sustainable and optimal outcomes of glycemic control would not be achieved in Sri Lanka. The impact of sociocultural factors can be explored by using an ethnographic approach. This method captures essential aspects of cultural beliefs, attitudes and values related to the interested phenomena from a naturally realistic perspective (O'Reilly, 2005). Using the method of participant observation of everyday lived experiences from an “emic” (inside) view would enable the researcher to understand the complexity of the sociocultural context relating to behaviors and life styles of particular groups (Roper & Shapira, 2000). In summary, a descriptive study with

qualitative data collection methods supported by an ethnographic approach helps the researcher to develop a holistic understanding of glycemic control and related behavioral aspects among adults with T2DM in Sri Lanka.

Objectives of the Study

1. To explore the current situation of glycemic control among adults with type 2 diabetes mellitus in Sri Lanka.
2. To explore sociocultural context influencing glycemic control behaviors among adults with type 2 diabetes mellitus in Sri Lanka.

Research Questions

1. What is the current situation of glycemic control among adults with type 2 diabetes mellitus in Sri Lanka?
2. How does sociocultural context influence glycemic control behaviors among adults with type 2 diabetes in Sri Lanka?

Scope of the Study

This study had two phases. The first phase explored the current situation of glycemic control among adults with T2DM in Sri Lanka. The second phase explored the sociocultural context influencing glycemic control behavior among adults with T2DM in Sri Lanka. It was conducted in the Colombo District, Western province. The study period was from January, 2013 to August, 2013.

Definition of Terms

Adults with T2DM refer to adult males and females diagnosed with T2DM (FBS levels are > 126 mg/dl in two instances) by a physician and as stated in their diagnosis card.

Glycemic control refers to the attainment of a normal level of fasting blood glucose (FBS) less than or equal to 126 mg/dl in adults with T2DM (resulting from glycemic control behaviors) (ADA, 2012). In the present study glycemic control was considered as less than or equal to 126 mg/dl and the latest FBS report in the medical record will be considered in this assessment. HbA1c is not available in the state hospitals in Sri Lanka.

Glycemic control behaviors refers to activities or practices employed by adults with T2DM to control their glycemic levels including diet control (food type, quantity and frequency), regular exercises/physical activity (type, duration and frequency), and adherence to medication regimen (type, dosage, time, and frequency) as recommended by the intensive literature review.

Health care personnel imply nurses and doctors who provide care/treatment for adults with T2DM for more than one year and practicing at the CSTH and FPC during the study.

Ayurveda practitioners/traditional healers are those practicing Ayurveda and traditional treatment to provide care/treatment for adults with T2DM in the community. Ayurveda practitioners have a university degree as training but the traditional healers do not. They are trained by their parents or relatives based on knowledge and skills gained through the generations and passed on from father to son.