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Assessment of care of type II diabetic patients at family care centers in Alniaryah province ,eastern Saudi Arabia

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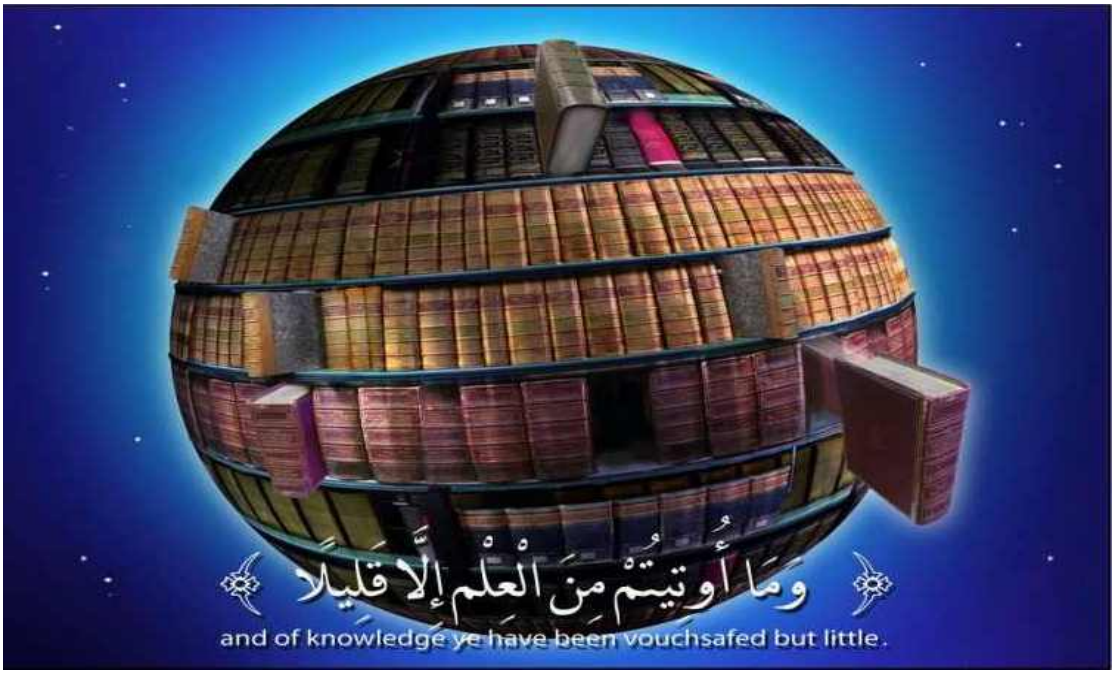

بسم الله الرحمن الرحيم

(وَيَسْأَلُونَكَ عَنِ الرُّوحِ قُلِ الرُّوحُ مِنْ أَمْرِ رَبِّي وَمَا أُوتِيتُم مِّنَ الْعِلْمِ إِلَّا قَلِيلًا)

(من الآية 85 من سورة الإسراء)

(القرآن الكريم)

TafsirEbnKathir&AlTabari

(They ask you about the spirit say :The spirit of the Lord is what obtain of science only slightly)

(85)

Acknowledgment

Acknowledgment

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Dedication

Dedication

To the soul of my father

My mother

My dear husband.

contents Page

List of tables

Table number **Page**

List of figures

Figure number **Pag**

List of abbreviations

ADA…….…….. American Diabetes Association

AGI…….……..... Alpha Glucosidase I inhibitor

BMI…….…….……...Body Mass Index
CBM……Capillary Basement Membrane

CDC……...Centers for Disease Control and PreventionCVD……...……Cardio-Vascular Disease

DCCT…….……. Diabetes Control and Complications Trial

DCCTRG……..... Diabetes Control and Complications Trial Group

DKA.....Diabetic Keto-Acidosis

DM……..…….……Diabetes Mellitus

DNA…….....Deoxy Ribonucleic Acid

DPP…….…....Diabetes Prevention Program

DPPRG……..…Diabetes Prevention Program Research Group

EASD……European Association for the Study of Diabetes

ESRF……...……End Stage Renal Failure

FPG……...……Fasting Plasma Glucose

GAD……...….. Glutamic Acid Decaroxylase

GDM……... Gestational Diabetes Mellitus
HbA1c……...……..…..…….Glycosylated Hemoglobin

HE…….…….…..…Health Education

HDL……...……..……. High-Density Lipoprotein

HNF…….…… Hepatocyte Nuclear factor

HTN……....…….....Hypertension

IDDM……...……Insulin-Dependent Diabetes Mellitus

V

IEC……...International Expert Committee

IFG…….……...…… Impaired Fasting Glycaemia

IGT…… Impaired Glucose Tolerance

LDL……..……Low Density Lipoprotein

MNT…….……...…….…..……Medical Nutrition Therapy

MODY1……...… Maturity Onset Diabetes of the Young1

MODY2……... Maturity Onset Diabetes of the Young2

MODY 3…….. Maturity Onset Diabetes of the Young3

NDDG…… …….……..…..National Diabetes Data Group

NHANESIII…….Third National Health &Nutrition Examination Survey

NIDDM…….……. non-insulin-dependent diabetes mellitus

OGTT……...…….……Oral Glucose Tolerance Test

T2DM… …….…….……... Type 2 Diabetes Mellitus

UKPDS…….….. United Kingdom Prospective Diabetes Study
USA…….....….United States of America

USPSTF……. US Preventive Services Task Force
VHA…….Veterans health Administration

VLDL…… …….……...Very Low Density Lipoprotein
WHO……. World Health Organization

Introduction

Introduction

Diabetes mellitus is derived from the Greek **dia** (for passing through), -betes (from the verb **bainein** for passing or moving), and mellitus(Latinized from the word for sweetened) **(Rakel, 2002).**

Diabetes is a condition primarily defined by the level of hyperglycemia giving rise to risk of micro vascular damage (retinopathy, nephropathy and neuropathy) macro vascular complications (ischemic heart disease, stroke and peripheral vascular disease),reduced life expectancy, diminished quality of life**(WHO, 2006)** and increased risk for infections (like lower respiratory tract infection, urinary tract infection, and skin and mucous membrane infection) **(Muller et al, 2005)**.

The prevalence of diabetes varies throughout the world, but increasing because of changes in lifestyle. According to the estimates of World Health Organization around 100 million all over the world people suffer from diabetes **(Sarah et al, 2004)** and **(WHO, 1997).**

Type 2 diabetes (formerly called non-insulin-dependent or adult-onset) results from the body's ineffective use of insulin. Type 2 diabetes comprises 90% of people with diabetes around the world, and is largely the result of excess body weight and physical inactivity **(WHO, 1999)**.

Type 2 diabetes is one of the important health problem world wide.374 million people worldwide have diabetes In 2004, an estimated 3.4 million people died from consequences of high blood sugar. More than 80% of diabetes deaths occur in low- and middle-income countries. About half diabetes deaths occur among people under 70 years, 55% of whom are females. WHO projects that diabetes deaths will increase by two thirds between 2008 and 2030 **(WHO , 2009).**

By the year 2025 over 75% of the people with diabetes will reside in developing Countries **(Nicolucci et al, 2006).**

The American Diabetes Association (ADA) estimated the national costs of diabetes in the USA for 2007 to be $US 174 billion, including $116 billion in excess medical expenditures and $58 billion in reduced national productivity **(ADA, 2007)**.

The Kingdom of Saudi Arabia (KSA), a country of over 16 million people, is a rapidly developing country. During the past three decades the potential surge in socioeconomic growth has considerably influenced the lifestyle of the people. A recent community-based national epidemiological health survey in KSA has found the overall prevalence of DM as 23.7%[3] which is alarming for health care providers **(Al-Nozha et al, 2004).**

Saudi Arabia is considered to be one of the top 10 countries in terms of diabetes prevalence worldwide **(Sicree et al, 2009).** The prevalence varies according to the geographic region of the Kingdom, being the highest in the Northern and Eastern regions, which account for 27.9% and 26.4% of cases, respectively. The Western and Central regions were 24.7% and 23.7%, respectively. The lowest prevalence is in the Southern region, which accounts for 18.2% **(Al-Nozha et al, 2004)**. The prevalence of diabetes mellitus in Saudi Arabia in 2013is 23.9% **(ADA, 2014).**

Diabetic retinopathy is a leading cause of blindness and visual disability It has been noticed that, 15 years after the incidence of diabetes, around 2% of diabetics go blind, and around 10% of them suffer from severe visual impairment **(WHO, 2012).** Diabetes is the leading cause of kidney failure, accounting for 44% of all new cases of kidney failure in 2008 **(CDC, 2011)**.

Type 2 diabetes causes nerve damage through different mechanisms, including direct damage by the hyperglycemia and decreased blood flow to nerves by damaging small blood vessels. This, lead to sensory loss, damage to limbs, and impotence in diabetic men. It is the most common complication of diabetes, as it befalls around 50% of them. Type 2 diabetics are twice more vulnerable to the risk of death than non-diabetics **(Diabetes Control and Complications Trial Research Group, 1993)**.

Diabetes increases the risk of heart disease and stroke. 50% of people with diabetes die of cardiovascular disease (primarily heart disease and stroke) **(Morrish et al, 2001).**

While diabetes itself is costly from both social and economic perspectives, diabetes-related complications contribute towards the bulk of the costs associated with the disease. Prevention of such complications is now possible in the majority of cases with appropriate and timely care **(WHO, 2006)** and **(Eastman et al, 1997)**.
Based on these findings numerous general practice guidelines for diabetes care have been published (**Nicolucci et al, 2006)**.

The greatest challenge, however, resides in the fact that the treatment of such a complex disease requires multiple processes and decisions which involve both healthcare providers and patients. Despite the numerous technical advances observed in type 2 diabetes control and evaluation, type 2 diabetes care remains, perhaps, the most complex chronic disease to be managed at the primary health care level **(The Diabetes Prevention Program Research Group , 2002).**

However, large proportions of patients with diabetes mellitus are not receiving care in accordance with these guidelines **(Valk et al, 2004).** Studies conducted in USA **(Saaddine, et al 2006)**, Europe**, (Valk et al, 2004)** and Arab countries **(Roaeid et Al, 2007)** reported low adherence to process and outcome measures.

Due to the nature and complexity of type 2 diabetes, comprehensive and integrated care should be made accessible and affordable for the patients so that they can attain high standard of diabetes management. This includes provision of health education