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Beliefs about Cholesterol Lowering Drugs and Medication Adherence Among Palestinian Adults with Dyslipidemia in Ramallah and Bethlehem areas of the West Bank

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Dedication

I dedicate my graduation project to those who harvested thorns from my way to pave the path of science to the great hearts to my parents.

To my lovely husband for his endless support and encouragement. To my beloved children Khaled and Mesk who give me the power and inspiration to keep on.

Also to my sisters and brothers, who gave me all the support to complete my research step by step. Without their unfailing support and help this work would not have been possible.

Declaration

I certify that this thesis submitted for the degree of Master, is the result of my own research, except where otherwise acknowledged, and that this study (or any part of the same) has not been submitted for a higher degree to any other university or institution.

Signed: Jihad Shakarna

Jihad Khalil Shakarna

Date: 14/12/2019

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List of Abbreviations

Abbreviation	Explanation
BMQ	Brief medication questionnaire
CHD	Coronary heart disease
CVD	Cardiovascular disease
HDL	High density lipoprotein
HIV	Human immune deficiency
IRB	Institutional review boards
LDL	Low density lipoprotein
MESA	Multi ethic study of atherosclerosis
MMAS-4	Morisky medication adherence scale four items
MS	Metabolic syndrome
NCD	Necessity concern differential
NCDs	Non-Communicable Diseases
NCEP	National cholesterol education panels
NCF	Necessity concern framework
NHANES	National health and nutr Trying to provide the medicine permanently to patients in private health centers that it needs permanent and uninterrupted treatment for these medicinesition examination survey
SD	Standard deviation
SPSS	Statistical package for social sciences
SRM	Self-regulatory model
TC	Total Cholesterol
TG	Triglyceride
WHO	World health organization

Abstract

Background:

Lipid-lowering drugs are widely underused, despite strong evidence indicating they improve cardiovascular end points. Poor patient adherence to a medication regimen can affect the success of lipid-lowering treatment.

Objectives:

The aim of the present study was to assess the level of medication adherence among hypelipedimic patient's, patient's beliefs about medicines and explore the relationship between medication adherence and medicines beliefs and other demographic and clinical variables in the study participants.

Methods:

The study was a cross sectional design conducted between Jan 2019 and July 2019 to evaluate the influence of beliefs about medicines, demographic and clinical factors on adherence to cholesterol lowering drugs among Palestinians. This study was carried out at middle governmental primary healthcare clinics in Ramallah and Bethlehem cities. The disease specific tool is Morisky and beliefs about medicine questionnaires (BMQ).

Adherence was measured using self-reported four-item Morisky Medication Adherence Scale (MMAS-4) which measures the medication adherence with questions 1-4 having dichotomous responses (No =0 score and Yes = 1 score). The results were analyzed using Statistical Package for Social Sciences (SPSS) program version 21 Multiple linear regression analysis was performed to determine the most important variables related to adherence in dyslipidemic patient.

Results:

Of the 220 patients approached, a total of 185 patients agreed participate in the study with a response rate of (84.1%). Of them, 106 (57.3) were men. Almost half of the participants 88 (46.5%) were ≥ 56 years. According to the MMAS-4 scale, medication non-adherence was high (47.6%). The majority of the participants (65.5%) believed in the necessity of their treatment for maintaining their good health. Mean necessity score of 17.3 (S.D. 3.7) was significantly greater than mean concerns score of 14.0 (3.5); *P<0.001*). Multivariate regression demonstrated that 4 variables remain significant and associated with non-adherence; illiterate (OR= 2.52; CI: 0.9 – 4.3; *P=0.03*), polypharmacy (OR= 3.18; CI: 1.9-5.7; *P=0.007*), having comorbidity (OR= 3.10; CI: 2.2-4.6; *P=0.005*) and having concerns about side effects (OR= 2.89; CI: 1.1-4.6, *P=0.04*) were most likely non-adhere to their medications.

Conclusion:

Non-adherence among patients taking lipid lowering agents was high. Most people with hyperlipidemia have positive beliefs about the necessity of their medication. However, levels of concern are also high. Physicians should identify and target high risk patients and individualize their treatment plan in order to achieve adequate control of hyperlipidemia.

Key words:

Hyperlipidemia, Cholesterol, Statin, Adherence, Beliefs, Palestine, WHO, MMSA-4, BMQ, CVD, CHD.

Chapter one

Introduction

1.1. Dyslipidemia

When lipoproteins are overproduced or deficient, the result is a lipoprotein metabolism disorder known as dyslipidemia. Elevated total cholesterol is one of the culprits of dyslipidemia. Cholesterol is a fat protein that is produced by the liver and is necessary to maintain healthy cell membranes, brain function, hormone production, and vitamin storage.

The two forms of cholesterol are high-density lipoprotein (HDL) and low-density lipoprotein (LDL). As their names suggest, both LDL and HDL are lipoproteins that comprise a combination of a lipid and a protein. The lipid portion is bound to proteins, for the cholesterol molecules to move through the blood.

LDL and HDL are unique in their function. LDL it is sometimes called “bad cholesterol," because high LDL levels cause risk factor for the CAD. In contrast, HDL is called as the "good one," because it transfer the cholesterol back to liver, which is how cholesterol is removed.

A diagnosis of dyslipidemia occurs when the total cholesterol (TC) level is above the normal value, or when LDL is generated or eat diary or bad foods [1]. A hyperlipidemia patient may show elevated levels of either LDL and TG or both. Triglycerides are a type of fat found in the blood. TG are associated with coronary heart disease.

Metabolic syndrome (MS) is a condition when a patient has a variety of medical disorders that combined show an increased risk of developing cardiovascular disease (CVD). Studies in Middle East showed that MS affects approximately one in four people, and its incidence increases with age. Due to reports showing increase percentages of MS and its main cardiovascular risk factors (15-60%) among Middle Eastern populations, there is a need for national and international programs that counter obesity, hypertension, and especially dyslipidemia. Ultimately, it is crutial to focus on early prevention and control [2].

The treatment of dyslipidemia is clearly prevent primary and secondary heart diseases. However, in Europe and the USA, cross-sectional surveys examining factors associated with chronic heart disease show that treatment of dyslipidemia remains inadequate. Consequently, more studies are necessary to evaluate the present level of undertreated dyslipidemia , which occurs when a patient receives a lipid-lowering treatment but still has TC and/or LDL-C levels that are uncontrolled, and why some patients on suboptimal therapy which consequently prone to CVD. [3-6]. Thus, the aim of this study was to examine the effect of dyslipidemia on the daily life of patients by measuring their compliance indices and their adherence to medication.