UNIVERSITI TEKNOLOGI MARA

THE PREVALENCE OF VITAMIN D DEFICIENCY AMONG SAUDIS AND NON-SAUDIS, DIABETICS AND NON-DIABETICS, AND THE IMPACT OF VITAMIN D ON INSULIN SENSITIVITY IN TYPE TWO DIABETIC MALE PATIENTS IN AL-MADINAH AL-MUNAWARAH

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ABSTRACT

Vitamin D, or the “sunshine” hormone became an attractable topic that recently captivates many researchers. The increased prevalence of vitamin D deficiency became an alarming health concern despite the accumulative evidence exploring its crucial role in various body organs. Type 2 diabetes mellitus (T2DM) is a major, progressive health condition that can lead to premature morbidity and mortality. The link between the risk of T2DM, insulin resistance and vitamin D deficiency has perplexed the medical society due to the controversy in the data available. Saudi Arabia (SA) is a sunny region, however ample amount of data reported the increased prevalence of vitamin D deficiency along with T2DM. This huge rise in SA found to be in concordance with the high global rate of both conditions. This study aimed to compare vitamin D deficiency between Saudi and non-Saudi nationalities, between healthy and T2DM patients. It aimed also to assess the possible associated factors for vitamin D deficiency and to study the impact of vitamin D supplementation on insulin resistance, and glycemic control on T2DM male patients living in Al-Madinah Al-Munawarah. This study consisted of three phases. Phase one and two were cross-sectional studies, while phase three was double-blind, randomized control trial. All phases were carried on the Medical Unit, Taibah University. A total of 193 participants were enrolled in this study. Results showed a significant increase in vitamin D deficiency in Saudi population compared to the non-Saudis (P = 0.001). A significant increase was also detected in vitamin D deficiency in T2DM patients than the non-diabetics (P = 0.001). In addition to, clinical improvement, which was observed among the intervention group in HOMA-IR (57%), FBG (50%) and HbA1c (50%). Meanwhile, no significant effect was seen in these parameters between the intervention and control groups after the administration of vitamin D supplementation 50,000 IU for 24 weeks to the intervention group. The occupation status and duration of diabetes was found to be associated with vitamin D deficiency in phase one and phase two. Insulin sensitivity, FBG and HbA1c were found to be associated with vitamin D status among the intervention group in phase three.

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TABLE OF CONTENTS

		Page
CONFIRMATION BY PANEL OF EXAMINERS		**ii**
AUTHOR'S DECLARATION		**iii**
ABSTRACT		**iv**
ACKNOWLEDGEMENT		**v**
TABLE OF CONTENTS		**vi**
LIST OF TABLES		**x**
LIST OF FIGURES		**xii**
LIST OF ABBREVIATIONS		**xiii**
CHAPTER ONE INTRODUCTION		**1**
1.1	Background	1
	1.1.1 Diabetes mellitus overview	1
	1.1.2 Diabetes mellitus worldwide	3
	1.1.3 Diabetes mellitus in the Middle East	3
	1.1.4 Diabetes Mellitus in Saudi Arabia	4
	1.1.5 Type 2 diabetes mellitus (T2DM)	6
	1.1.6 Insulin	9
	1.1.7 Vitamin D	14
	1.1.8 Vitamin D and insulin resistance	26
1.2	Problem statement and research hypothesis	27
1.3	Research questions	28
1.4	The objectives of the research	29
	1.4.1 General objective	29
	1.4.2 Specific objectives	29
1.5	Significance and Strength of the study	29
CHAPTER TWO LITERATURE REVIEW		**32**
2.1	The association of vitamin D deficiency with the development and progression of T2DM	32

2.2 The role of vitamin D in Insulin Resistance (IR) and Type 2 Diabetes Mellitus (T2DM) 37
2.3 The correlation between vitamin D levels with micro- and macro-vascular complications 44
2.4 The impact of vitamin D Supplementation on glycated hemoglobin in T2DM 46
2.5 The prevalence of vitamin D deficiency among Saudi population 50

CHAPTER THREE METHODOLOGY 57
3.1 Study design 57
3.2 Study population 58
3.3 Sample size calculation 58
3.4 Study Flow Chart 61
3.5 Sampling criteria 62
3.5.1 Inclusion criteria: 62
3.5.2 Exclusion criteria: 62
3.6 Data collection 63
3.6.1 Run-in period 63
3.6.2 Active phase 64
3.6.3 Laboratory Measurements 68
3.6.4 Compliance 69
3.6.5 Homeostasis Model Assessment (HOMA-IR) 70
3.6.6 Randomization 71
3.7 Data analysis 72
3.8 Ethical consideration 73

CHAPTER FOUR RESULTS 74
4.1 Phase one: Prevalence of vitamin D deficiency between Saudis and non-Saudis 75
4.1.1 The anthropometric profile of both groups 75
4.1.2 Socio-demographic data for phase one 75
4.1.3 Dietary habits for the Saudi and non-Saudi participants 77
4.1.4 Duration and pattern of sun-light exposure among both groups in phase