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The association between health related quality of life and some indicators of severity and control in type 2 diabetic patients

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THE ASSOCIATION BETWEEN HEALTH RELATED QUALITY OF LIFE AND SOME INDICATORS OF SEVERITY AND CONTROL IN TYPE 2 DIABETIC PATIENTS

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A research report submitted to the Faculty of Health Sciences, Department of Internal Medicine, University of the Witwatersrand, Johannesburg, in fulfilment of the requirements, for the Degree of Master of Medicine in the branch of Endocrinology.

DECLARATION

I, Reyna Daya, declare that this research report is my own, unaided work. It is being submitted for the Degree of Master of Medicine. It has not been submitted for any degree or examination at this or any other university.

REYNA DAYA

FEBRUARY 2014

PRESENTATION AND PUBLICATION ARISING FROM THIS STUDY

Oral Presentation at the 48th Society for Endocrinology, Metabolism and Diabetes of South Africa (SEMDSA) Congress, Johannesburg, South Africa, April 2013

The association between the HRQOL and certain indicators of the severity and control of type 2 diabetes at the Diabetic Clinic at Helen Joseph Hospital.

Daya R, Raal FJ, Bayat Z

An abstract of this study was published in the Journal of Endocrinology, Metabolism and Diabetes of South Africa:

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DEDICATION

To my parents, Kiran and Ansuya Daya, thank you for your continued support and encouragement. I am who I am today, because of you.

To my husband, Jayesh Patel, thank you for your never ending faith, positivity and for being my pillar of strength.

ABSTRACT

INTRODUCTION

Diabetes mellitus (DM) is a chronic metabolic disease that makes many demands on lifestyle modification, potentially causes debilitating and life threatening complications and has important implications on a patient's well-being and social life.

The chronic hyperglycaemia of DM is associated with long-term complications with damage and failure of various organs. Unlike in acute illnesses, successful management of any chronic disease is predominantly patient driven. Diabetic patients are largely responsible for their glycaemic control, compliance to treatment and ultimately curbing the complications of long standing DM.

There are numerous factors which govern patient's attitude towards their disease which subsequently influences their compliance to treatment. The long-term complications of DM can only be prevented by a firm, life-long commitment to a treatment regimen. It is essential that patients perceive that this affords them a good health related quality of life (HRQOL), and prevents complications and ultimately reduces the noteworthy strain on public health funding.

Health care providers should strive to understand that having a chronic disease impacts all spheres of a patient's life, namely physical, emotional, and social. Ideally, such patient-centred awareness should be incorporated into chronic disease treatment strategies designed to improve or enhance daily functioning and hence enhance HRQOL. HRQOL might be an important factor to ascertain whether patients will adhere to their prescribed

treatment regimen and thus lead to fewer consultations and emergency hospitalizations and hence reduce health care costs.

The purpose of this study was to determine whether there is an association between the HRQOL and certain indicators of the severity and control of type 2 diabetes at the Diabetic Clinic at Helen Joseph Hospital.

OBJECTIVES

The purpose of this study was to determine whether there is an association between the health related quality of life (HRQOL) and certain indicators of severity and control in type 2 diabetic patients, at the Diabetic Clinic at Helen Joseph Hospital.

a) To determine the HRQOL of a sample of type 2 diabetic patients.

b) To describe the demographics (age, gender, smoking pack year history, number of alcohol units consumed per week etc.) of the population being studied.

c) To document the following parameters which are important in determining the control and severity of type 2 diabetes:
    - Glycosylated haemoglobin (HbA_{1C})
    - Determine the patient's total amount of insulin required per day (if on insulin therapy).
    - Body Mass Index (BMI)
    - Exercise compliance

d) To determine whether there is an association between any or all of the above parameters and the HRQOL of these patients.

e) To determine the presence of any co-existing diseases and compare HRQOL between diabetic patients with and without co-existing diseases:
    - hypertension (HT)
    - dyslipidaemia

RESEARCH DESIGN AND METHODS

This was a clinical audit, cross-sectional in nature and a descriptive study of patients attending the Helen Joseph Hospital, Diabetic Clinic from June to September 2012. The study population was a sample of 200 type 2 diabetic patients routinely attending the diabetic clinic.

Each patient was given a Diabetes-39 questionnaire, which was then analysed in conjunction with data from patient's file. No incentives were offered for participation nor were they discriminated against if they refused to participate.

The questionnaire captured demographic variables such as age, gender, age of diagnosis, marital status, exercise regimen, employment status, living arrangements, smoking and alcohol habits, height, weight, as well as diabetes-specific variables such as concurrent use of antihypertensive medication and/or lipid lowering drugs.

The patient's files were then analysed and various diabetic parameters (HBA_{1C}, lipogram, weight, height, number of insulin units used per day and concurrent use of OHA were noted.

RESULTS

The study found an association between type 2 DM and certain domains of HRQOL. QOL was more affected by sexual functioning, anxiety and worry, and diabetes control.

Results also demonstrated an association between HBA_{1C} and HRQOL. Furthermore there was an association between HRQOL and HT and dyslipidaemia.

There was no association found between HRQOL and other clinical parameters namely; number of insulin units used per day, exercise, BMI, lipogram, or the use of OHA. Demographic parameters; age, gender, age at diagnosis, employment status, living arrangements were also shown to have no impact on HRQOL in this study. There was also no association between HRQOL in patients who consumed alcohol and cigarettes and those who did not.

PREFACE

This study was approved by the Committee for Research on Human Subjects, University of Witwatersrand.

Ethics clearance certificate protocol number: M120536

Reference number: R 14/49 Dr Reyna Daya

LIST OF ABBREVIATIONS

ACCORD	- Action to Control Cardiovascular Risk in Diabetes
ACE	- American College of Endocrinology
ADVANCE	- Action in Diabetes and Vascular Disease
AHA	- American Heart Association
AW	- Anxiety and worry
BMI	- Body mass index
CAD	- Coronary artery disease
CVD	- Cerebrovascular disease
D-39	- Diabetes-39 questionnaire
DCCT	- Diabetes Care and Control Study
DC	- Diabetes control
DM	- Diabetes Mellitus
ED	- Erectile dysfunction
EM	- Energy and mobility
ExCEED	- Exploratory Comprehensive Evaluation of Erectile Dysfunction
GI	- Glucose intolerant
HBA_{1C}	- Glycosylated haemoglobin
HDL	- High Density Lipoprotein
HJH	- Helen Joseph Clinic

HPSS	- Highest Possible Scale Score
HT	- Hypertension
HRQOL	- Health related quality of life
IDF	- International Diabetes Federation
LDL	- Low density lipoprotein
LPSS	- Lowest Possible Scale Score
MI	- Myocardial infarction
Mmol/l	- milimole per litre
N	- Total number
NHLS	- National Health Laboratory Service
No	- Number
OHA	- Oral hypoglycaemic agent
PCA	- Principle component analysis
PSSR	- Possible Scale Score Range
PVD	- Peripheral vascular disease
QOL	- Quality of life
RSS	- Raw Scale Score
SA	- South Africa
SB	- Social burden
SD	- Standard deviation

SF	- Sexual functioning
SF-36	- 36-Item Short-Form Health Survey
SEMDSA	- The Society for Endocrinology, Metabolism and Diabetes of South Africa
STATA	- Statistics/ Data analysis program
TC	- Total cholesterol
TG	- Triglyceride
TOHP	- Trials of Hypertension Prevention
TOMHS	- Treatment of Mild Hypertension
TSS	- Transformed Scale Score
VADT	- Veterans' Administration Diabetes Trial
WHO	- World Health Organisation

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2) To J Gregory Boyer and Jo Anne L Earp, in North Carolina, for allowing me to use the Diabetes-39 questionnaire.
3) To the patients who participated in the study, by filling in the questionnaire and for allowing me to view their medical files.
4) To Manoj Chiba, for your kind assistance with the statistics and for your advice.

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