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Stress and quality of life among diabetic patients: A correlational study

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Abstract
This study aims to focus on the relationship between stress and quality of life among diabetic patients. Diabetes is a long-term chronic disorder which forces an individual to make modifications in his/her lifestyle in order to balance the metabolism of the physical body. The imbalance of insulin levels in the body causes Stress in patient's life. Stress in the result acts as a barrier for effective glucose control in the body which has a direct effect on fight-or-flight tendency of the individual, which causes further imbalances in the cognitive abilities of an individual. These disturbances in thoughts due to stress deeply affect the life of an individual and deplete the quality of life. The formulated hypothesis was rejected and the findings indicated that stress and quality of life of the diabetic patients were found to be negatively correlated at the significance level of 0.01. Stress with diabetes can wear you down mentally and physically this makes managing the illness more difficult and affects the quality of life deeply.

Keywords: stress, quality of life, diabetic patients

Introduction

Diabetes Mellitus

Diabetes mellitus (DM), commonly known as Diabetes is a chronic disorder. It is a condition in which an individual suffers from a group of metabolic diseases which arises due to high blood glucose (blood sugar), This happens either because insulin production in the body is inadequate, or because the cells in the body do not respond properly to insulin, or it could be both at the same time, This absolute or relative deficiency of insulin results in the accumulation of sugar in the bloodstream (hyperglycemia) and also causes the appearance of sugar in the urine. Lack of insulin affects the metabolism of carbohydrate, protein, lipids, electrolytes, and water. The failure to metabolize glucose leads to the breakdown of fats in the body as an alternative source of energy; this process disturbs the acid-base balance in the body and results in the accrual of ketones in the blood (ketosis) which, if untreated, can lead to convulsions, coma, and death. Diabetes can be diagnosed by few common symptoms which include Increase in Thirst, Hunger, Fatigue, Loss of Weight, and Excessive Urination.

DM as a disorder does not hurt, it is neither contagious nor it is visible, Diabetes as a disease does not have any effect on Individual's life being education, professional training, occupation, family life etc. Diabetes is not a viral or infectious disease, it is a disease caused by internal dysfunction in the human body. If we talk about the prevalence rate of diabetes it only affects 3% of the total population in India.

Types of Diabetes Mellitus

Type 1 or insulin dependent diabetes mellitus (IDDM) also called juvenile onset diabetes or ketosis-prone diabetes: It has its onset on an individual during the childhood or adolescence period of his/her lifespan which can be due to dysfunction in the genetic factors which often affects pancreas **(**insulin-producing beta cells in pancreas are damaged**)** in order that it produces negligible or less amount of insulin.

Type 2 or non-insulin-dependent diabetes mellitus (NIDDM) or mature onset diabetes: It generally has its onset in adulthood around the average age of 40 yrs. it is also carried hereditarily, It is a condition that affects the way the body processes blood sugar (glucose) this usually happens when beta cell functions but show insulin resistance, this often causes exacerbated obesity. This stage is treatable in an initial state with a combination of a healthy diet and exercises, in more severe cases insulin shots may be prescribed.

Stress

Stress is a negative emotional state experienced by individuals who are usually accompanied by Biochemical, Physiological, Cognitive and Behavioral changes which can be predicted and are directed either towards altering the stressful event as accommodating to its effects. (A. Bawm; 1990). Stress is considered a big problem in our society. Some 75% of our bodily diseases are said to be stress related. Studies have shown it is often a major cause of cardiovascular diseases and cancer. Stress may not be directly related in causing diabetes, but stress may play an imminent role in diabetes, Stress may sometimes unmask diabetes, by causing blood glucose levels to rise (Kahn and Weir, 1996) [7]. In response to the stressful events, the body usually gears up to take action. This reaction taken by the body to avoid stress is called the fight-or-flight response (ADA, 2007). Repeated stress may lead to failing rheostat phenomenon of hypothalamus leading to less efficient hormonal control through feedback mechanisms (Dilman, 1986) [4]. Usually, the fight-or-flight response does not work efficiently in the people who suffer from diabetes, because insulin is not always able to direct the extra energy into the cells, so glucose piles up in the blood (ADA, 2007). Making things worse, many sources of stress are not short-term

threats, for example, an individual loses a body part in an accident which causes him a long-term stress so the Stress hormones which are designed to deal with short-term danger stay turned on for a long time. As a result, it causes a long-term rise in high blood sugar levels. Many long-term sources of stress could be mental. Just like physical stress, mental stress can be a short-term too let say stress for appearing in an examination/interview or of planning a family function. In mental stress, the body produces hormones to balance the physiology which may at times dysfunction. Physical stress, such as illness or injury, causes higher blood glucose levels in people with either Type of diabetes, In most of the cases, Stress usually restricts the body from liberating insulin in the individuals with Type 2 diabetes. Diabetes comes as quite a shock when it is diagnosed and is certainly a very stressful time (Wijenaike, 2002; ADA, 2007) [16]. In particular, stress can have an influence on glycemic control in different ways, especially in some "stress reactive" individuals (RIAZI *et al*. 2004) [12]. Diabetes as a long-term illness is itself an important cause of stress in patients. In fact, this disease involves forceful lifestyle changes, diet, frequent medical examinations, drugs, serious complications in order to maintain good health for survival. All these components affect the quality of life in diabetic patients to a great extent. Changes in lifestyle may include avoiding tasks which include physical efforts, smoking, holding a healthy diet and learning to manage injections may all contribute in addition to the worry regarding chronic illness (Davis *et al*., 1999) [3]. Stress is a direct threat to the life and high level of stress always produces a barrier to living a quality life.

Quality of life

Quality of life, well-being, life satisfaction, happiness is the concepts which are quite prominent in behavioral researchers. In recent few decades of behavioral researchers, scholars are focusing majorly towards the individuals and on the components how individuals can live a smooth, comfortable and happy life. Quality of life (QOL) is a concept increasingly appreciated as an outcome variable in bio-behavioral research. It is viewed as a multidimensional, dynamic concept related to but distinct from, well-being, health status, life satisfaction and hope (KING CR, 1998) [8]. According to Polonsky (2004) [11] argued that QOL in diabetes is like a dignified way of talking about the personal side of diabetes, the burden faced by individuals living with the illness. The different clinical features of diabetes and type of complications observed can be critical components in evaluating the global individual perception of quality of life. However, in diabetes not just physical functioning is effected (e.g. decreased energy, limitations, and physical suffering) rather it also causes disturbances in psychological states (e.g. depression and stress, as above) and social relationships (Von *et al*. 2005) [13]. All these components affect the QOL and the illness perception of diabetics. Certainly, stress, like other patients' psychological features and conditions, is a critical component of QOL but also personal socio-demographic components and gender, too, can interfere concurrently (Wandell E, 2000) [14] and be closely associated with self-rated health (Jonnson. P *et al*. 2001) [6]. The quality of life of a diabetic individual is deeply affected by stress. The prescribed life of the diabetic individuals is full of mental as well as physical stressors, the decreased energy in diabetes makes individuals lazy and agitated which often results in irritation and anger issues, the prescribed diet and avoidance of eatables with high glucose levels also cause stress. When focusing on these aspect individuals starts to feel self-pity and vulnerable which reduces the level of self-esteem in the individual as well. These mental and physical disturbances also affect the social life of the organisms, this chain of stressors (mental, social, and physical) together increase the level of stress which affects the mental health as well as the quality of life negatively.

Objective

To examine the relationship between Stress and quality of life of the diabetic patients

Hypothesis

There will be no significant relationship between Stress and quality of life of the diabetic patients.

Methodology

Participants

In the present study, a sample of diabetic patients was taken from the age group ranging from 20 to 80. The sample consists of 50 males and 50 females. All the patients in the sample selected are diagnosed with Diabetes type I or type II, and taking treatment respectively. The study was conducted in Delhi and the data was collected from the various patients taking treatment in the hospitals situated in Delhi. Some patients were also taking treatment from the family Doctors.

Tools

In the study Perceived Stress Scale PPS (Cohen. S., Kamarck, T., Mermelstein, R. 1983) [2] was used, the scale is widely used in social science researchers by both scholars and students to measure psychological stress. The scale was designed to measure "the degree in which individuals appraise situations in their lives to be stressful" (Cohen *et al*., 2007) [1]. The PPS items evaluate the degree to which individuals believe their life has been unpredictable, uncontrollable and overloaded recently. The scale consists of 10 items based on Likert scale, PPS measures the perception of stress on a 5 point scale from never to very often (from 0-4). The PPS scores obtained ranges from 0 to 40. The scores between 0 and 13 signify the low level of stress, whereas scores greater than 20 signifies with a high level of perceived stress. Items in the scale are based on the recent feeling and thoughts of the individuals. According to Cohen (1983) [2], PSS is not a diagnostic instrument, but it tries to compare the perceived stress of the subjects in relation to the current objective events. The higher degree and longer duration of self-perceived stress as indicated by higher scores and is considered to be a risk factor for clinical psychiatric disorders.

Cohen's Perceived stress scale (PSS) for measuring stress has a lower value of Cronbach Alpha of. 519 but is accepted as for the test reliability.

The WHOQOL-Bref was also used in the study to determine

the QOL [WHOQOL group, 1998] in the selected sample group. WHOQOL-BREF is an abbreviated version of the WHOQOL-100 quality of life assessment survey. It consists of 25 items, The WHOQOL-BREF is also based on the Likert scale and all the items are scored between 1 and 5, the higher scores indicate better Quality of life. The total scores range from 0 to 120 and Subjects with scores ≥ 96 were classified as having good QOL. It is one of the most popular and widely used scales in the researchers across the world. WHOQOL-BREF is considered to be a highly reliable test with Cronbach alpha very high at. 933 level.

Procedure

In the Present study after deciding the population and the area for research, Researcher himself went for the data collection to the selected area, He himself went to various hospitals to be covered and with permission from the authorities, He met the Diabetic patients. After making the desired rapport researcher briefed the respondents about the situation he also underlined to the patients about what is to be done and distributed the questionnaire's, He then briefed them about the scales and requested them to fill the desired information and also cleared the queries of the respondents. It was also made sure to the respondents that the provided information will be kept confidential and will only be used for the research purpose. After collecting the info respondents a special thanks were given to the patients for their support and time.

Statistical Analysis

In order to meet research objective, Data were analyzed and Pearson Correlation was administered to examine the relationship between Stress and quality of life of the diabetic patients.

Result and Discussion

Table 1: Correlation Table

Correlation	Quality of Life
Stress	-.583**
Sig.(two tailed)	0.00
N	100

* Significance level 0.05

** Significance level 0.01

In the present study, Researcher attempted to examine the relationship between Stress and quality of life in the diabetic patients. Results indicate a negative relationship between stress and quality of life. After the analysis o, the value of 'r' was observed = -.583** and it was found to be negatively significant at 0.001 level. On the basis of the result, it can be inferred clearly that if stress level increases in an individual (diabetic patient) the quality of life moderately depletes. The above findings are also supported by "Stress triggers different physical and mental reactions in women and men with diabetes in which case comes to decrease of life quality" (Miftari, S., & Melonashi, E. (2015) [10]. The length of illness was also a factor that plays a role in the level of stress and life satisfaction in patients with diabetes, our results showed a statistically significant positive relation between the degree of stress and the length of disease, which means that the longer the disease lasts the more stressed become the patients and in contrary we have significant negative relation with quality of life, which means that the longer the disease lasts the lower is the quality of life. Other studies also have got almost similar results (Honish A, *et al*. 2006) [5]. "The patients of the age group 30-40 showed the lower scale of stress and better quality of life, and this is because young patients are more carefree, optimistic and they have a positive outlook on life" (Miftari, S., & Melonashi, E. (2015) [10]. The formulated hypothesis for the study was rejected and the findings indicate that stress and quality of life of the diabetic patients are negatively significant which makes it very clear that stress have a negative effect on the quality of life which can be inferred as an individual goes through a high level of stress the quality of life is effected deeply, Stress as a negative emotional state which is accompanied by Biochemical, Physiological, Cognitive and Behavioral changes directly effects cognitive functioning, emotional balance and decision making of the individuals which usually causes disturbances in life and depletes the quality living and life style.

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