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Effect of regular physical activity on mental health of non-insulin dependent diabetes mellitus patients

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Abstract

The aim of the present study was to analyse the impact of physical activity on mental health of non insulin dependent diabetes mellitus patients. To conduct the study 100 patients suffering from non insulin dependent diabetes mellitus (Ave. age 41.12 yrs) were selected as sample. Out of these, 50 subjects were engaged in regular physical activity like walking, cycling, light exercises etc. while 50 subjects was not doing regular physical activity. The selection of diabetic patients was based on their clinical findings, blood reports and diagnosis by registered medical practitioner. To assess mental health of selected subjects, three dimensional positive mental health inventory (namely self acceptance, ego strength and philosophy of life) prepared by Agashe and Helode (1988) was used. Comparative analysis of data reveal that mental health of subjects engaged in regular physical activity was significantly superior as compared to subjects with non-regular or negligible participation in regular physical activity. It was concluded that participation in regular physical activity is beneficial for mental health of non insulin dependent diabetes mellitus patients.

Keywords: Non Insulin dependent diabetes mellitus, mental health, physical activity

Introduction

Diabetes refers to body's inability to produce insulin or use it effectively. Commonly referred to as diabetes, Diabetes mellitus (DM) is a group of metabolic disorders. The disease is linked to lifestyle changes. The share of India in global burden of diabetes is 49%. There are 72 million reported cases in 2017. This has serious consequences in terms of economic and health point of view. The annual cost of treating diabetes is increasing alarmingly and will definitely put burden on economy of India in near future. Apart from economic issues, diabetes is also associated with mental health issues. Depression, anxiety, emotional instability etc. are found to be associated with diabetic patients (Li *et al.*, 2008) [9]. Apart from this studies conducted by Khuwaja *et al.* (2009) [7], Jyotsna (2011) [16], Palizgir *et al.* (2013) [11], Aminu *et al.* (2017) [2] have focused on negative side of mental health but none addresses the impact of diabetes on positive mental health. To address the issue of managing diabetes related psychological issues with medical sciences, role of physical activity also came into prominence. In number of studies conducted by Kirjonen and Telama (1984) [8], Pan *et al.* (1997) [12], Craft and Perna (2004) [4], Gapler *et al.* (2006) [5], Tirumalesh and Chandraiah (2017) [13] reveals a positive impact of regular physical activity/exercise in management of mental health issues such as depression, stress, anxiety disorder etc. Surprisingly impact of regular physical activity on mental health of diabetic type II patients has not been assessed so far. Hence the present study was planned.

Objectives

The objective of the present study was to assess the impact of regular physical activity on mental health of type II diabetic patients.

Hypothesis

Type II diabetic patients having daily physical activity routine will show more magnitude of mental health as compared to type II diabetic patients with no daily physical activity routine.

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Methodology

The following methodological steps were taken in order to conduct the present study.

Sample

To conduct the study 100 patients suffering from non insulin dependent diabetes mellitus (Ave. age 41.12 yrs) were selected as sample. Out of these, 50 diabetic subjects were engaged in regular physical activity like walking, cycling, light exercises etc. while 50 diabetic subjects was not doing regular physical activity. The selection of diabetic patients was based on their clinical findings, blood reports and diagnosis by registered medical practitioner.

Tools

Mental Health Inventory

To assess mental health of selected subjects, three dimensional positive mental health inventory (namely self acceptance, ego strength and philosophy of life) prepared by Agashe and Helode (1988) [1] was used. It consists of 36 questions. The test-retest reliability coefficient of this

inventory is 0.723. This inventory assesses the positive aspects of mental health.

Procedure

100 patients suffering from non insulin dependent diabetes mellitus were selected as sample after screening their clinical findings, blood reports and diagnosis by registered medical practitioner. The selection of 50 non insulin dependent diabetes mellitus patients with regular physical activity was based on aspects such as walking, cycling, light exercise for minimum of 35 minutes duration. Ethical considerations were followed and afterwards subjects were assured that the information provided by them will be kept confidential. Positive mental health inventory was administered to each diabetic patient as per the suitability of the subject. Responses so obtained were scored off and tabulated. Independent sample 't' test was used to compare mental health of non insulin dependent diabetic patients on the basis of physical activity. Results shown in table 1.

Result & Discussion

Table 1: Comparison of Mental Health among Non Insulin Dependent Diabetic Patients on the Basis of their Physical Activity

| Variable | Physical Activity | | | | t | Level of Significance |
|---------------|-------------------|------|------------------|------|------|-----------------------|
| | Regular (N=50) | | Irregular (N=50) | | | |
| | M | S.D. | M | S.D. | | |
| Mental Health | 21.62 | 3.60 | 18.74 | 4.23 | 3.66 | .01 |

** Significant at .01 level

A perusal of entries reported in table 1 shows statistically significant difference in mental health of non insulin dependent diabetic patients on the basis of their physical activity at .01 level of significance. The calculated $t=3.66$ indicate that mental health of type II diabetic patients engaged in regular physical activity ($M=21.62$) was significantly superior as compared to type II diabetic patients with irregular or no physical activity apart from their day-today work.

It has been scientifically documented that physical activity and exercise increase the level of non-adrenalin which effectively regulates mood (Beyer *et al.*, 2002) [3]. With mood regulation person visualise life in more positive way. By virtue of exercise person accepts his shortcomings and regular physical activity brings emotional stability. All these factors contribute to better positive mental health. Hence the result of the present study is also applicable to mental health benefits of regular physical activity among diabetic patients.

Conclusion

On the basis of results, it may be concluded that positive aspect of mental health in non insulin diabetic patients can be enhanced by engaging them in regular physical activity.

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