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## A comparative study of mental health among insulin dependent diabetes mellitus patients: With reference to physical activity

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### Abstract

Effect of regular physical activity was observed on mental health of insulin dependent diabetic patients was observed in this study. This study was carried out on 100 insulin dependent diabetes mellitus patients (Ave. age 38.29 yrs). The sample comprise of two types of subjects i.e. 50 subjects doing regular physical activity in the form of walking, cycling, light exercise etc. while the remaining were not engaged in physical activity apart from their day to day work schedule. 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. Results indicate that positive aspects of mental health was found to be significantly higher in IDDM patients engaged in regular physical activity as compared to those IDDM patients who were not doing physical activity on regular basis apart from their day-to-day routine. It was concluded that positive mental health in insulin dependent diabetes mellitus patients can be enhanced with the help of regular physical activity regimen.

**Keywords:** Insulin dependent diabetes mellitus, mental health, regular physical activity

### Introduction

When human body cannot produce or process blood glucose or blood sugar, the condition is referred to as diabetes. It is a metabolic disorder. There are mainly two types of diabetes i.e. type-I and type-II diabetes respectively. In type-I diabetes body cannot produce insulin whereas in type II although body produce insulin but its utilization is decreased. With changing lifestyle the magnitude of diabetes is also increasing. In India apart from other diseases diabetes is significantly of more concern. As per International Diabetes Federation around 123 million Indians will be suffering from diabetes in the year 2040. The current situation is no better with 5% of our population is suffering from diabetes. The increasing prevalence of diabetes is serious issue in India because of its huge burden on economy. Apart from economic burden diabetes may also increase the mental health issues related to diabetes. In number of studies it has been documented that diabetes may lead to depression, mental disorders and adjustment problems (Anderson *et al.*, 2002, Kessler *et al.*, 2005; Penckofer *et al.*, 2007; Li *et al.*, 2008; Manderson and Kokanovic, 2009) [2, 6, 10, 7, 8]. To prevent and manage diabetes number of medical therapies are available but the role of physical activity has not been assessed in terms of management of mental health in diabetic patients. Regular physical activity has been known to have a therapeutic use as far as management of psychological problems are concerned. These claims are established in number of studies conducted by Harvey *et al.* (2010) [5]; Motallebi and Noorbakhsh, 2010 [9]; Brendon *et al.* (2016) [4]. Whether regular physical activity boost positive mental health of insulin dependent diabetes mellitus patient has not been explored scientifically as yet in any scientific study. Since positive aspect of mental health such as self acceptance, ego strength and philosophy are important for overall well-being, hence researcher decided to assess the impact of regular physical activity on mental health of insulin dependent diabetic mellitus patients.

### Objectives

The objective of the present study was to assess the impact of regular physical activity on mental health of insulin dependent diabetes mellitus patients.

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### Hypothesis

Participation / non participation in regular physical activity will have significant bearing on mental health of insulin dependent diabetes mellitus patients.

### Methodology

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

### Sample

100 insulin dependent diabetic mellitus patients (Ave. age 38.29 yrs) were served as sample in the present study. The sample comprise of two types of subjects i.e. 50 subjects doing regular physical activity in the form of walking, cycling, light exercise etc. while the remaining were not engaged in physical activity apart from their day to day work schedule. The inclusion criteria for diabetic patient was blood report and diagnosis of registered medical practitioner. In this study, purposive sampling was used for selection of sample.

### Tools

#### Mental Health Inventory

Three dimensional positive mental health inventory (namely self acceptance, ego strength and philosophy of life) prepared by Agashe and Helode (1988) [1] was used to assess mental

health of insulin dependent diabetes mellitus patients. This inventory consists of 36 yes/no type questions and it assess the positive aspects of mental health. This inventory is highly reliable and valid.

### Procedure

50 insulin dependent diabetes mellitus patients engaged in regular physical activity were selected as subjects. Another set of 50 insulin dependent diabetes mellitus patients without any regular physical activity apart from their day-to-day work were also selected. Regular physical activity was considered when a subject was doing walking, cycling, light exercise, yoga for minimum of 40 minutes duration five days a week. After informing subjects about objectives and ethical issues regarding study, three dimensional mental health inventory prepared by Agashe and Helode (1988) [1] was administered to each subject. The administration of inventory was carried out as per norms set for the same. The responses on each statement for every subject was scored off as depicted in manual of inventory. The scoring was then tabulated for each subject. Independent sample 't' test was used as statistical tool for data analysis. The analysis of data is presented in table no. 1.

### Result & discussion

**Table 1:** Comparison of Mental Health among Insulin Dependent Diabetes Mellitus Patients on the basis of their Physical Activity Status

| Variable      | Physical Activity Status |      |                    |      | t    | Level of Significance |
|---------------|--------------------------|------|--------------------|------|------|-----------------------|
|               | Regular (N=50)           |      | Non-regular (N=50) |      |      |                       |
|               | M                        | S.D. | M                  | S.D. |      |                       |
| Mental Health | 22.32                    | 3.88 | 20.62              | 3.06 | 2.42 | .05                   |

\*\* Significant at .01 level

A perusal of entries reported in table 1 indicates significant difference in mental health of insulin dependent diabetes mellitus patients on the basis of their physical activity status. Insulin dependent diabetes mellitus patients doing regular physical activity exhibited significantly superior mental health (M=22.32) as compared to insulin dependent diabetes mellitus patients not engaged in regular physical activity (M=20.62). The reported  $t=2.42$  also support this finding empirically at .05 level of significance.

The result of the present study can be justified by study conducted by Beyer *et al.*, 2002 [3]. According to this study the level of non-adrenalin is increased by doing physical activity and exercise. This helps to regulate mood. With regulated mood, person thinks positively about life outcomes and accepts his/her shortcoming. So, naturally positive aspect of mental health also gets enhanced after physical activity. Since the subjects of the present study were insulin dependent diabetes mellitus patients, it can be stated that physical activity is equally beneficial for diabetic patients in elevating their mental health as in healthy adults.

### Conclusion

It was concluded that positive mental health in insulin dependent diabetic mellitus patients can be enhanced with the help of regular physical activity regimen.

It may also be concluded that apart from clinical treatment of diabetic patients with psychological problems, physical activity regimen should also be introduced for their overall well-being.

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