

## **The Magnitude of Erectile Dysfunction and its Correlation with Other Microvascular Complications in Type 2 Diabetes Mellitus Patient in a Tertiary Care Hospital in Eastern Part of India**

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### **Abstract**

**Introduction:** Erectile dysfunction is the serious complication of the patient suffering from diabetes. “Despite being a critical concern that affects physical health, the problem regarding erectile dysfunction is discussed by the patients along with their physicians in the developing countries”. This study is aimed to explore the magnitude of erectile dysfunction and its interrelationship with other respected patients suffering from type 2 diabetes in the tertiary care hospital in India.

**Methods:** The study based on the cross-sectional healthcare service is carried out for the diabetes patient

in India with a history of “type 2 diabetes mellitus” that includes criteria in the studies with informed consent. Quantitative data analysis has been used to assess the erectile function considering erectile dysfunction.

**Results:** The magnitude of erectile dysfunction varies from degrees of severity that has been found with 76.87% among the patients of type 2 diabetes.

**Conclusion:** There has been found a high prevalence of erectile dysfunction among the patients suffering from type 2 diabetes which is linked with duration of type 2 diabetes burdens and poor control of glycemetic.

**Keywords:** Erectile dysfunction, type 2 diabetes, poor control of glycemic, physical health

### **Introduction**

“Type 2 diabetes is currently a critical burden as a chronic disease progressive that is affecting several parts of the body. Erectile dysfunction (ED) is considered to be persistent inability to maintain and achieve this enough election to allow the satisfactory intercourse”. In diabetic patients, ED open occurs due to the changes in microvascular, endothelial and neuropathy dysfunction. The issue of ED and type 2 diabetes has been considered in India where the patients as well as the physicians are not taking into consideration sharing their physical health. Additionally, the study aims to "investigate the magnitude of ED and its relation to other microvascular complications in type 2 diabetes mellitus patients in the tertiary care hospital of Eastern part of India". Diabetes is a major problem for public health which is increasing and affecting many people in the eastern part of India. Approximately 400 million people had suffered from "diabetes mellitus" in the year 2017 and is expected to rise to 620 million in the year 2045.

The magnitude of diabetes mellitus in India is continuously rising, thus imposing the extra burden to the health care system of India. Morbidity and mortality in the patients having diabetic mellitus usually result in both micro vascular as well as macro vascular complications. In this research the paper is going to indicate the relation with microscope complications in diabetes mellitus patients. One of the common and underestimated complications of diabetes mellitus is erectile dysfunction. Furthermore, it has been estimated that the prevalence of ED should reach 300 million by 2025. The presence of ED is linked with clinical and psychosocial consequences that include depression and

poor quality of life. Therefore, ED it is considered as the suitable complication for type to diabetes where above 95% of the cases is treated successfully.

### **Methods**

In a hospital jurisdiction mainly based on the study related to the cross selection for the better understanding of diabetic patients by visiting the diabetes outpatient department (OPD) of SCB Medical College & Hospital, Cuttack after the ethical approval granted by the Ethics Committee of the Institution (548/ 16.09.2017). This paper where mainly based upon the calculation on the previous quantitative data collection which include various study relatively based upon the data collection from the different state of India which is necessary important in order to categorize different study allocation field which consist of sexual health of marriage life (Natarajan and Mokoboto-Zwane, 2022).

The research also includes the diabetic meditations as well as research programs also include the justifiable answer and question about the social and sexual relationship of the couple who are living in a effectively stable relationship in the society. This is because most of the diabetic patients are presented with a hypothetical situation and profound hypertension about the financial life as well as other factors of production which are questionnaire and create tension about the daily life, so there are higher chances to understand the performance level of the patients by understanding their past life and present as well (Agofure et al. 2020). If the research work found that the patient also had psychiatric problems in the past and other segments of disease which mostly includes and founded in the marriage couple special in India which is neurological disorder, cardiovascular disease, endocrine disease, renal disease, as well as surgery patients. The research also includes

those patients who are under therapy of steroid drugs medications and other altering chronic disease is excluded from the research work.

This information is crucial for the research of the healthcare system so zero negligence points are making therapy less effective so detail transparent with the information and the proper information guidance. On the other hand, helping the patient and healthcare body system by working only on those situations after the proper information communication system or good with the doctor. Because the beneficiary is just for clients so if there is any communication gap between the clients and the healthcare body therapist it has less chances of working in order to build great performance level of the clients in terms of overcoming the disease and create complex situations during the therapy which have short term as well as long term possibilities (Oza et al. 2022). After the situation of information collection from the client the next step of the method is to use written consent from the respondents before further processing with the study or research work.

After the proper information collection system was done from both ends the next step is to face to face interview with a client by using some restructure and question and system of working for the potential clients with the detailed work and the further required cooperation which is relatively necessary for the research work. During the face-to-face interview question from both end the proceeding is a valid question and system of working which also comes under the authority of the healthcare system in the ES score categorized which relatively consist of some different level of categorized performance level of the client.

## Results

The below table of descriptive statistics provides the information about the erectile function, normal erectile function and erectile dysfunction. The mean value for erectile function is 2.72 for normal erectile function is 5.6 for erectile dysfunction is 2.008. Alternatively, the standard error indicated as 1.6, 3.14 and 1.41 respectively.

|                          | Erectile Function | Normal Erectile Function | Erectile dysfunction |
|--------------------------|-------------------|--------------------------|----------------------|
| Mean                     | 2.73              | 5.61                     | 2.01                 |
| Standard Error           | 1.61              | 3.14                     | 1.41                 |
| Median                   | 2.48              | 5.12                     | 1.01                 |
| Mode                     | #N/A              | #N/A                     | #N/A                 |
| Standard Deviation       | 3.23              | 6.28                     | 2.82                 |
| Sample Variance          | 10.43             | 39.39                    | 7.96                 |
| Kurtosis                 | -5.53             | -5.50                    | 1.53                 |
| Skewness                 | 0.08              | 0.09                     | 1.42                 |
| Range                    | 6.06              | 11.79                    | 5.99                 |
| Minimum                  | -0.06             | 0.21                     | 0.01                 |
| Maximum                  | 6                 | 12                       | 6                    |
| Sum                      | 10.90             | 22.44                    | 8.03                 |
| Count                    | 4                 | 4                        | 4                    |
| Confidence Level (95.0%) | 5.14              | 9.99                     | 4.49                 |

Table 1: The descriptive statistics of the information about the erectile function, normal erectile function and erectile dysfunction

The below table of correlation is indicating the relationship between the variables where the Pearson correlation value for all the variables is indicated as one. This study is not showing any significant relationship among the west circumference and body mass index with erectile function and due to which the history of burden on type 2 diabetes indicated with the presence of erectile dysfunction.

|                          | Erectile Function | Erectile Function | Erectile dysfunction |
|--------------------------|-------------------|-------------------|----------------------|
| Erectile Function        | 1                 |                   |                      |
| Normal erectile function | 0.999992333       | 1                 |                      |
| Erectile dysfunction     | 0.735679809       | 0.73315766        | 1                    |

Table 2: The correlation indicating the relationship between the variables where the Pearson correlation value for all the variables as one

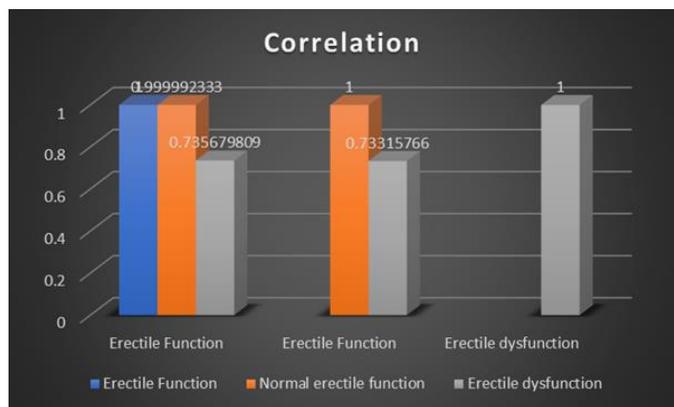


Figure 1: Correlation among the variables, (Source: MS-Excel)

The below regression table indicates the variable's value in terms of multiple R, R square, adjusted R square, standard error, and observation as 0.73, 0.54, 0.31, 2.67, and 4 respectively.

| Regression Statistics |             |             |             |             |                |
|-----------------------|-------------|-------------|-------------|-------------|----------------|
| Multiple R            | 0.735679809 |             |             |             |                |
| R Square              | 0.541224781 |             |             |             |                |
| Adjusted R Square     | 0.311837171 |             |             |             |                |
| Standard Error        | 2.679163151 |             |             |             |                |
| Observations          | 4           |             |             |             |                |
| Anova                 |             |             |             |             |                |
|                       | df          | SS          | MS          | F           | Significance F |
| Regression            | 1           | 16.93581262 | 16.93581262 | 2.359433369 | 0.264320191    |
| Residual              | 2           | 14.35583038 | 7.177915189 |             |                |
| Total                 | 3           | 31.291643   |             |             |                |

Table 3: The variable's value in terms of multiple R, R square, adjusted R square, standard error, and observation

**Discussion**

With the knowledge, one can observe that there is less scientific literature from India regarding erectile dysfunction and this received study will comprehend erectile dysfunction among the patients of India. All the

effect of erectile dysfunction are considered to be multifactorial where the key objective of the study is to identify the magnitude of a erectile dysfunction among the patients suffering from type to diabetes and it is link with different other factors of risk such as disease duration of burden, glycemic control, lifestyle and obesity specifically on the habits of alcohol drinking and smoking among the patients of diabetes in India (Tamrakar et al. 2021). "Diabetes is considered to be the common disease nearly in all the countries and can be ranked as a high prevalence of morbidity among the Nations.

Among the different complications of diabetes, the problem of physical health in the patients has given significant attention in recent times. The link between erectile dysfunction and type to diabetes has drawn serious concern in developing countries like India". Usually, it is considered as the normal consequences with an increasing age. Many studies have highlighted the issue of pathophysiology in diabetes behind the physical problems in people (Shakya et al. 2020). Prevalence of erectile dysfunction of diabetes is from 30% to 90% which is concluded by different studies where erectile dysfunction is occurring as a serious symptom for diabetes in 12% to 30% of people.

In the study the magnitude of erectile dysfunction among the patients has been indicated as 76.87% which is higher than the result of the study done in different regions of the world. This study presents significant correlation among the variables with the duration of type to diabetes burden and the glycated hemoglobin. Furthermore, this study also presents the impact of different complications of diabetes such as diabetes progression and poor control of glycemic that is related to the erectile function (Shiferaw et al. 2020). The

diabetes progression with the abnormalities of microvascular function is leading to erectile dysfunction that is reported in the study. The study also indicates the inter relationship between the increased amount of waist circumference with erectile dysfunction and the same findings which are presented in the study. The effect of alcohol consumption and smoking has been the main cause of erectile dysfunction. However, findings of the study concluded with the association of erectile dysfunction with drinking and smoking habits. In this study the patients suffering from diabetes are being categorized into non consumers and consumers of alcohol and smoking consumption.

These findings indicate no significantly between the habits and erectile dysfunction (Mahishale et al. 2019). In the knowledge study can be easily addressed to the physical health related to erectile function and diabetes in the context of India poster the higher prevalence can be implied to the requirement of further study with vague information that helps to identify the present findings. Since this study might not present the overall community to set a definite reason for conclusion and recommendation but provides information about the issues among the diabetes patients with higher prevalence for the population of the study.

### **Conclusion**

This research work addresses the conclusive manner of current situation and burden of chronic diseases and their effects in several parts of the performance level of Ed and there influences level of working of diabetic patients especially in India where these diseases are highly increasing day by day. In India the consideration of diseases of diabetes to categories two types of patience which is relatively physical health performance level and their reducing performance of immune system of the

patients and the helping hand from the physical Liberty and other physicians which are relatively based on as helping and for the clients conducted by the health care system. Their main aim is to reduce the chronic diseases from the clients in help to immune and healthy fitness by understanding the nature of diseases the clients and the particular clients by understanding and through transparent communication between the client and the health care body with the physicians operated and experience background and set up by the authority in order to help the client for the long run of healthy body. There are many unspoken issues which are height by the clients for their personal reason in the effects of physician therapy are not performing well and most of the time which is conclusive the scene in the India or Indian patients are not spoken clearly with the therapist for some social obligations and lack of proper education and knowledge about the diseases and proper guidance. Hindi research work, the study material and the historical data clearly showcase options down and other fields of operations in a conclusive manner to understand the ratio of different diseases which is creatively based on Indian diabetic patients.

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