Biochemistry

# Indian Diabetic Risk Score-An Eye Opener among Medical Students

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**Abstract:** According to IDF diabetic atlas 8th edition, south –East Asian region is the 2nd highest of all IDF regions. It was estimated that. It was estimated that by 2040, this will raise to 150 million 69.1 million adults are diabetic in India according to 2015 census. For every 11 persons 1 is diabetic. 1 child in every 6 births is affected by hyperglycemia in pregnancy. $2/3^{rd}$ of people with diabetes is living in urban area and belongs to working age group. 1 in every 2 persons is undiagnosed. To motivate the youngsters to lead a healthy life style and create awareness about the risk of developing diabetes due to lifestyle modifications. Questionnaire based study among 100 medical students further evaluation of blood glucose levels among the high risk group. We have identified that the lack of exercise was the main risk factor among the study group. There is a lack of physical activity among medical students of the study group. The awareness study has helped them to realize the need for exercise and healthy diet to stay away from diabetes. We are planning for frequent motivations to help them prioritize health.
**Keywords:** IDRS, Exercise, Diabetes mellitus, life style modifications.

## INTRODUCTION

Diabetes prevalence, death due to diabetes and health expenditure due to diabetes continues to increase across the globe with impact on social, financial, and health system. Three quarters of those with diabetes are living in low and middle income countries. The number of people with diabetes aged 20-79 years is predicted to rise to 642 million by 2040[1]. Understanding this grave rise in diabetic population, every physician has to help in creating awareness and preventing the onset of the disease.

Every budding physician should understand that life style modifications can prevent the onset of type [2] diabetes mellitus. Exercise and diet play key role in preventing diabetes mellitus. A study by Mohan *et al*. has shown how increasing awareness and empowerment of community can possibly help in the prevention of diabetes and other non-communicable disorders [3]. Unhealthy eating habits are the major cause of diabetes in our cities and towns. The junk food that are fat and calorie rich are easily available. As a majority of the working immigrant population in Chennai depend on these unhealthy fast-foods, leading to more prevalence of diabetes in urban population. Lack of physical activity and dietary habits among young adolescent group of the society is major cause for increased risk for developing diabetes. Non-Communicable Diseases due to lack of a clear etiological agent is heavily dependent on identifying and tackling risk factors. The risk factors like age, gender, family history are non-modifiable while others like smoking, diet, physical activity, hypertension, diabetes etc. are modifiable [4].

## AIM

The aim of the study is create awareness among medical students about the risk developing type 2 diabetes mellitus due to unhealthy life style. Further to identify the high risk population and guide them with the right lifestyle modifications. To drive home the message about incorporating exercise and healthy eating among budding physicians.

## MATERIALS AND METHODS

This study was a cross sectional study. It was conducted in the Biochemistry department of Sree Balaji Medical College and Hospital. This study was approved by the institutional ethics committee. The period of the study was December 2017. The 2017-2018 Batch I M.B.B.S was briefed about the purpose of the study. The sampling method was convenient sampling method. The study was based on INDIAN DIABETIC RISK SCORE questionnaire. The IDRS is a very convenient and simple method to study the risk of diabetes among the Indian population [5]. Students with

the score more than 60% were advised to have fasting blood glucose (FBG) and post prandial plasma glucose (PPPG). The FBG & PPPG was assayed using Glucose Oxidase Peroxidase (GOD & POD) method. Results: out of 250 who have participated in the study, only 2 students had high risk score i.e. =/> 60. These 2 students were advised to check the FBS &PPBS and found to have normal values. We were surprised to see that 27% of the students did not incorporate exercise in their routine schedule. 51% of them had mild exercise whereas 22% of them had moderate exercise in their routine.

**Table-1: Risk of developing Type 2 Diabtes Mellitus**

|  | Male | Female | Total percentage |
|---|---|---|---|
| Low risk | 92 | 42 | 53.6 |
| Moderate risk | 45 | 65 | 44 |
| High risk | 3 | 3 | 2.4 |

**Table-2**

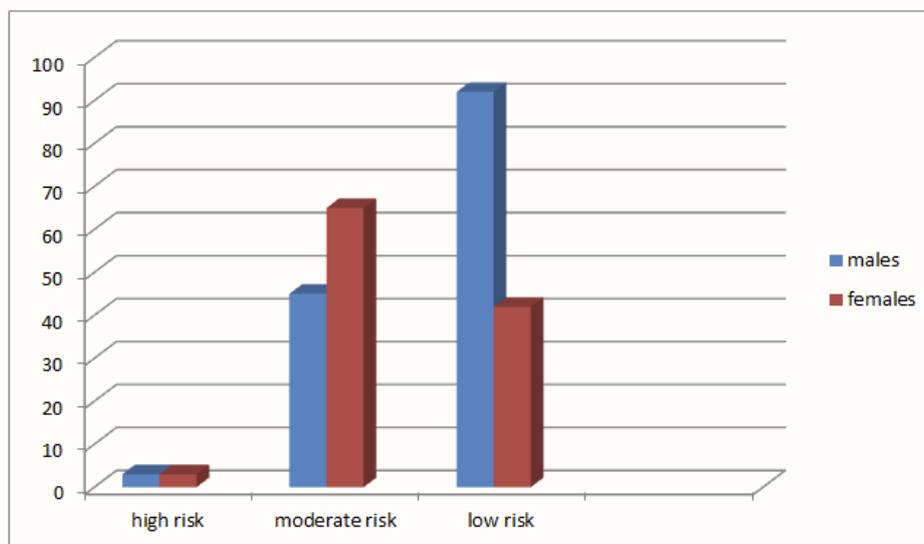| S.no | Category | | No. of students | Percentage (%) |
|---|---|---|---|---|
| 1 | Physical activity | Low | 67 | 26.8 |
|  |  | Moderate | 127 | 50.8 |
|  |  | High | 56 | 22.4 |
| 2 | Abdominal circumference | <80cms(f) and <90cms (m) | 193 | 77.2 |
|  |  | 80-89(f) & 90-99(m) | 35 | 14 |
|  |  | >/=90cms(f) & >/= 100 cms (m) | 22 | 0.8 |
| 3 | Family history of diabetes | Both parents are diabetic | 5 | 2 |
|  |  | Either one of them are diabetic | 45 | 18 |
|  |  | None of them are diabetic | 200 | 80 |



**Fig-1**

## DISCUSSION

The results of our study showed that most of the young medical students had moderate risk of diabetes. Although only 1% (>60) of the students participated in the study was in high risk category. About 44% (30-50) are in moderate risk and remaining 55% (<30) are in low risk score. The risk scores are in plotted in fig.1&2. As the age increases, the students in the moderate risk category are likely to progress into high risk category. These risk scores are based on the physical activity, increased abdominal circumference and family history of diabetes mellitus. Physical activity is very much reduced in 27% students. Next to this, family history of diabetes is major cause. About 20% of the study group has family history of diabetes. Risk of Diabetes occurs if the abdominal circumference is more. In this aspect almost 15% of the study group has the chance to develop diabetes. The values in various categories in our study are enlisted in table-1. A recent study conducted by Vardhan *et al.* showed the similar results i.e. decreased physical activity and family history of diabetes are the major reasons for occurrence

of diabetes in adolescent group. Another study was conducted in Maharashtra which also showed decreased physical activity was the prominent reason than family history of diabetes [7]. A previous study at our college among (2012-2013) Batch revealed that, in adolescent group mostly girls are more prominent and have high percentage of moderate diabetic risk when compared to boys [8].
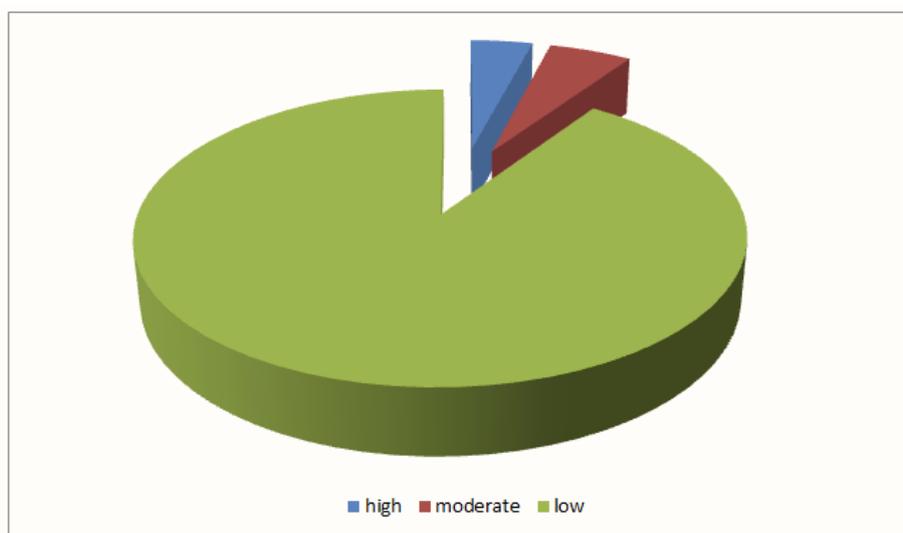


**Fig-2**

## CONCLUSION

As a result if this study, we have identified that lack of exercise was the prominent factor as a risk factor for Diabetes Mellitus among the adolescent group. We have conducted counseling1 about the importance of the exercise and adjusting it in the daily schedule of these developing physicians. Diabetes is also called as *silent disease* because half of the present diabetic population is undiagnosed .This study should be done year after year to bring mass awareness in the adolescent & younger aged adults to help them in preventing the occurrence of Diabetes .Our study has helped to carry the message through these upcoming physicians.

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