

**“PREVENTION IS BETTER THAN CURE” -A 2020 IDRS (INDIAN DIABETIC RISK SCORE) BASED STUDY, AMONG THE BUDDING FUTURE PHYSICIANS AT TIMES OF UNEXPECTED PANDEMICS LIKE THE COVID 19.**Dr. Gayathri Dilliraj<sup>1</sup> and Dr. A. Jamuna Rani<sup>2\*</sup><sup>1</sup>Tutor; Department of Biochemistry, Sree Balaji Medical College & Hospital, Chrompet, Chennai 44.<sup>2</sup>Associate Professor, Department of Biochemistry, Sree Balaji Medical College & Hospital, Chrompet, Chennai 44.**\*Corresponding Author: Dr. A. Jamuna Rani**

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**ABSTRACT**

**Introduction:** The IDA (International diabetes federation) has stated that Diabetes is one of the chief non communicable diseases globally. Adolescents have comparatively higher risk of developing type II diabetes mellitus mainly owing to their sedentary lifestyle habits. So early awareness and proper knowledge about diabetes among budding physicians needs to be emphasized at the earliest. **Materials & methods:** Cross sectional study conducted among the 250 first year medical college students, belonging to the 2019-2020 batch of Sree balaji medical college & hospital. The Indian diabetic risk score-IDRS questionnaire was the index used to estimate their associated risk. Students with high risk (score $\geq$ 60) & moderate risk (score of 30 – 50) were identified. **Results:** The results of our questionnaire based IDRS study showed that 58% of the students had moderate risk of developing diabetes & 2.8% of the students were in the high risk category. 73.2% of the students had no/very less exercise regimen in their daily schedule, especially the girl students. Thus the study emphasises the need of incorporating some form of exercise/physical activity in adolescents daily lifestyle to ensure they are healthy. Especially in times of pandemics like the trending COVID 19, where continuous social isolation and staying confined indoors for months, has made adolescents more lazy and mentally deprived.

**KEYWORDS:** IDRS(Indian diabetic risk score), 2019-2020 batch first year medical college students, Diabetes mellitus, physical activity.

**INTRODUCTION**

Diabetes is one of the chief non communicable diseases that still continues to be a leading silent killer globally. The prevalence of diabetes & the various risk factors associated with it are increasing exponentially at a hazardous rate. The IDA (International diabetes federation) has stated that around 425 million people are practically living with diabetes globally.<sup>[1]</sup>

Its prevalence is also increasing at an alarming rate in India, studies have shown that in India around 70 million people are diabetic, and its prevalence could be even more higher because most of the rural population & adolescent populations have no proper awareness or are mostly undiagnosed, which keeps us at the likely risk of becoming the global capital of diabetes by 2050 until and unless a timely awareness and intervention is not started at the earliest at the national scale, as stated by the country's apex research organisations. It could have a devastating effect on the country's development, human power and economy as well in the long run, if the present scenario of diabetes continues at the same rate.<sup>[2]</sup>

Adolescents are at the highest risk of developing type II diabetes mellitus mainly owing to the non modifiable risk factor such as, a positive family history where one or both of their parents or their first degree relatives have diabetes mellitus & the other chief contributor amidst adolescents for developing diabetes are:

1. Sedentary sophisticated, gadget dominated lifestyle, with very little time for physical activity or exercises
2. Unhealthy eating habits consisting of hyper palatable calorie rich junk foods, lacking fibre content or nutritive value.

Today's teenagers form our tomorrow's society. So early awareness and the proper knowledge about diabetes among budding physicians will help them to understand about the health implications and complications associated with this global threat.

**AIM**

The primary aim of this simple study was to create early awareness among the first year medical college students, about their own risks of developing type 2 diabetes

mellitus, in accordance with their family history and sedentary life style.<sup>[3]</sup> To make them understand, the significance of incorporating regular exercise and healthy eating habits in their day to day life. Proper awareness, understanding & knowledge of type II DM, among the budding doctors will also enhance their practise skills and their health care ethics with better patient care in the future as well, to turn the epidemics of diabetes.

**MATERIALS AND METHODS**

We did a cross sectional study conducted among the 250 first year medical college students belonging to the 2018-2019 batch of Sree balaji medical college & hospital Chennai, done in the department of biochemistry. The study was conducted during the month of December 2018. The first year MBBS students were explained in detail about the nature & purpose of the study. All the 250 students volunteered to be a part of the simple questionnaire based study. The convenient sampling method was used.

The IDRS i.e. the Indian diabetic risk score questionnaire was the index used. It's one of the easy to evaluate & easy to interpret methods to study the risk of developing diabetes among the Indian population.<sup>[4]</sup>

**Table 4 : Indian Diabetes Risk Score [IDRS]**

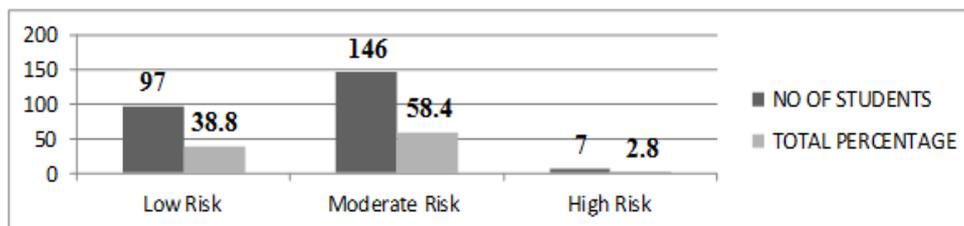
Particulars	Score
Age [years]	
< 35 [reference]	0
35 - 49	20
≥ 50	30
Abdominal obesity	
Waist <80 cm [female] , <90 [male] [reference]	0
Waist ≥ 80 – 89 cm [female], ≥ 90 – 99 cm [male]	10
Waist ≥90 cm [female], ≥ 100 cm [male]	20
Physical activity	
Exercise [regular] + strenuous work [reference]	0
Exercise [regular] or strenuous work	20
No exercise and sedentary work	30
Family history	
No family history [reference]	0
Either parent	10
Both parents	20
Minimum score	0
Maximum score	100

If the score is ... ≥ 60: Very high risk of having diabetes. Oral Glucose Tolerance Test (OGTT) is recommended to rule out diabetes. If this is not possible, at least a random blood sugar or a fasting blood sugar should be done 30 – 50: The risk of having diabetes is moderate.

**RESULTS**

**Table1: IDRS total scores & the associated risk of developing type 2 diabetes mellitus.**

Category	No. of students	Total percentage
Low Risk (Score < 30)	97	38.8
Moderate Risk (Score Of 30 – 50)	146	58.4
High Risk (Score>= 60)	7	2.8



**Figure 1.**

Of the 250 students who volunteered for the study, only 7 students (i.e. 2.8%) had high risk scores =>60. We tested their fasting blood sugar (FBS) and post prandial blood sugar (PPBS) levels using the GOD-POD (glucose

oxidase peroxidase) method in our hospitals central laboratory.<sup>[5]</sup> It was found to be well within the normal range.

**Table 2:**

S.NO	Category	No. of boys	No. of girls	Total number of students	Percentage of the study population	
1	Physical Activity	Low	71	112	183	73.2
		Moderate	22	26	48	19.2
		High	19	nil	19	7.6
2	Abdominal circumference	<80cms(F) & <90cms(M)	82	83	165	66
		80 – 89 cms(F) & 90 -99 cms(M)	24	46	70	28
		>/=90 cms(F) & >/=100 cms(M)	6	9	15	6

3	Family History Of Diabetes	Both parents are diabetic	6	7	13	5.2
		Either one of them are diabetic	46	41	87	34.8
		None of them are diabetic	60	90	150	60

73.2% of them stated to have no/very less exercise regimen in their daily schedule. While 19% exercised moderately & 8% of the students (all were boys) exercised regularly, almost on a daily basis. Girls in particular had very little physical activity/exercising tendency when compared to the boys as per our data collected.

## DISCUSSION

Covid 19 pandemic has made everyone confined to their houses. Where social distancing and staying indoors has become the basic norms to escape being infected. We need to have a cost effective strategy to focus on the prevention of the diabetic epidemic, not only among the high risk but also on the general population, especially during such times of months of physical inactivity.<sup>[6]</sup> The results of our questionnaire based IDRS study showed that most of the student volunteers in our study group i.e. 58% had moderate risk of developing diabetes & 2.8% of the students were in the high risk category as shown in figure 2. These risk scores are chiefly based on their subjective & our objective assessment of their physical activity, abdominal circumference & family history.<sup>[7]</sup>

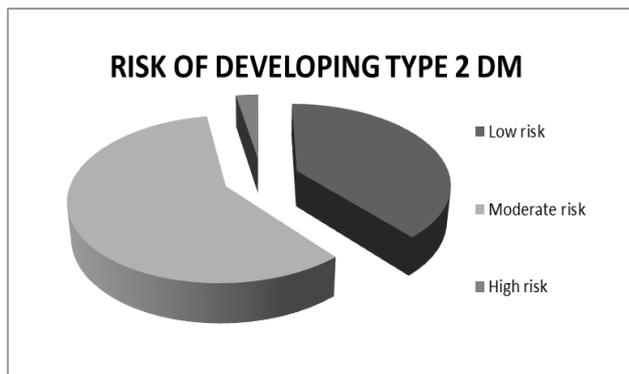


Figure 2.

Lack of inadequate physical activity (73%) & a positive family history (40%) were the two main contributors for the increased score in our data followed by the increased in abdominal circumference seen in only 34% of our study population as shown in table 2.

Similar study was also conducted in two of our previous batches- 2012-2013, 2017-2018 batches of first year students in our institution. We conducted department guest lecturers & interactive sessions comprising of all the three batches of volunteered students (past as well as the current batch) to keep them updated about the health hazards of diabetes and the various help complications associated with. We have also created one active Whats App up group where the students are free to share their

suggestions and tips, motivational videos about the importance of incorporating regular physical activity.

Following the study most of these students have started to exercise regularly on a regular basis and they prefer to climb stairs instead of using elevators even within the college campus, some of them prefer walking or riding bicycles to college rather than using public modes of transportation even for short distances. Though they sound simple, such simple lifestyle modifications could bring about significant health benefits in the long run.

## CONCLUSION

Creating awareness about diabetes is a critical public health priority.<sup>[8]</sup> Lifestyle modification is the simplest tool to combat type II diabetes mellitus which has been proved by various previous literature studies. And the first step in doing this is to identify the high risk individuals & to educate them about the significance of incorporating regular physical activity in their daily schedule to avoid developing type II diabetes mellitus in the long term.<sup>[5]</sup>

The advantages of following any forms of regular physical activity like brisk walking/ yoga/swimming etc could be compared with the iceberg phenomenon because there yet remains to be, surplus of added health benefits that remains unknown/neglected by all.<sup>[9]</sup>

So proper knowledge and explicit awareness campaigning is needed, especially amidst teenagers to enhance early awareness, to make them practise and preach the importance of physical activity to their family and society.

Thus from this student based study we were able to prove that lack of adequate physical activity, is the chief modifiable risk factor associated with diabetes in the adolescent population. And we were able to positively influence and modify the life of these budding doctors which they will ensure to practise and preach as well in the future as doctors.

Thus this study emphasises the need of incorporating some form of exercise/physical activity (it can even be the simplest form of exercises like skipping or brisk walking) in the daily lifestyle of adolescents to ensure they are healthy. Especially in times of a pandemic like the trending COVID 19, where continuous social isolation and staying confined indoors for months, has made adolescents more lazy and mentally deprived.

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