



Research Article

RISK ASSESSMENT FOR TYPE II DIABETES MELLITUS IN ADULTS IN SELECTED VILLAGES, MANGALURU

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ABSTRACT

Background: The global prevalence of diabetes has nearly doubled since 1980, rising from 4.7% to 8.5% in the adult population. So it is necessary to detect this large pool of undiagnosed participants for their risk for developing diabetes. The aim of this study was to assess the risk for type II diabetes mellitus in adults in selected village.

Method: A descriptive survey approach was used. A sample of 800 adults above 30 years was selected by purposive sampling technique. A demographic performa and Finnish Diabetes Association Risk assessment tool were used for data collection

Result: The result revealed that majority 50.75% were at low risk level, 38.5% were at slightly elevated risk group, 6% and 4.6% were at moderate and high risk group respectively. There was a significant association of level of risk for Type II diabetes mellitus with demographic variables such as Educational status, Occupation, Income, Marital status and illness.

Conclusion: Study concludes that adults in selected villages are at slightly elevated risk for type II diabetes mellitus. Preventive measures can be under taken to prevent the occurrence of diabetes mellitus in adults such as awareness programs and screening camps can be conducted to detect the diabetes mellitus.

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INTRODUCTION

Globally, an estimated 422 million adults were living with diabetes in 2014, compared to 108 million in 1990. The global prevalence of diabetes has nearly doubled since 1980, rising from 4.7% to 8.5% in the adult population. This reflects an increase in associated risk factors such as being over weighted or obese. Over the past decade, diabetes prevalence has risen faster in low- and middle- income countries than in high-income countries. The prevalence rates today are 4%- 9% in Europeans and reach 14%- 20% among Asian immigrants to India. Arabs, Chinese, individuals of African descent and Hispanics particularly high rates of diabetes, up to about 50% are found in native populations in the United States, Canada, Australia and the Pacific region.⁵

India is home to over 61 million diabetic patients. An increase from 50.8 million last year. By 2030 the diabetic burden is expected to cross 100 million marks. The International Diabetic Federation (IDF) say's India's prevalence of diabetics among 20-71 years old is 9.25%.The studies about the prevalence of diabetes in 2011 shows 366 million people and it is expected to rise to 522 million by 2030.²

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India, already the diabetic capital of world, leading towards a diabetic explosion. The recent study held in Chennai and Kanchipuram shows an increase in prevalence of 40% in urban areas in 6 years, 49% in rural areas in 3 years. It was predicted that by 2025 India will have 69.9 million people with diabetic.⁶

The chronic hyperglycemia of diabetes is associated with long-term damage, dysfunction, and failure of different organs, especially of eyes, kidneys, nerves, heart, and blood vessels. However, the earlier diabetes is diagnosed, the greater the chances are that serious complications, which can result from having diabetes, can be avoided. A study conducted in whole population in Chennai found 75.5% were not aware of diabetes. This indicates that majority of the patients have not been taught about diabetes by their physician.⁷

Screening programs to identify the high risk groups for specific disease condition are not very frequently incorporated in the health sector in rural community and the population at risk remains unaware of the benefits of screening. So it is necessary to detect this large pool of undiagnosed participants for their risk for developing diabetes and offer them early screening and therapy. Hence the investigators were interested to assess the level of risk for developing type II diabetes mellitus in adults in selected villages.

MATERIALS AND METHODS

Research Design

Descriptive research design was used

Extraneous Variables

In this study extraneous variables are,

- Age,
- Sex,
- Education,
- Occupation,
- Income,
- Religion,
- Type Of Diet
- Marital Status.

Setting of the Study

In this study the setting is Kalai, Benjanapadavu and Ammunje area, these are the three villages at Mangaluru, Karnataka state.

Population

In this study the target population is adults above 30 years of age in selected villages, Mangaluru.

Sampling

Purposive sampling technique was considered appropriate for selecting the sample for the study

Sample Size

In this study the sample size was 800 Adults above 30 years of age.

Criteria for the Selection of Sample

Inclusion Criteria

- Adults above 30 years of age.
- Adults available during data collection.

Exclusion Criteria

- Adults who were critically ill.
- Pregnant women.
- Adults who were diabetics.

Description of the Tool

In this study, tools used for data collection were:

1. Demographic performa.
2. Finnish Diabetes Association Risk assessment tool.

Description of Tool

Tool 1:- Demographic performa include information on age, sex, education, occupation, income, type of diet, marital status and presence of any other disease.

Tool 2:- The Finnish Diabetes Association risk assessment tool was used to assess information on age, BMI, waist circumference at level of naval, information on physical activity, diet, medication and hereditary factors.

Weighing scale was used to measure the weight, and measuring tape was used to measure the height and waist circumference.

The risk scores obtained by the sample was classified accordingly

Lower than 7:	Low: estimated one in 100 will develop disease.
7-11:	Slightly elevated: estimated 1 in 25 will develop disease.
12-14:	Moderate: estimated 1 in 6 will develop disease.
15- 20:	High: estimated 1 in 3 will develop disease
Higher than 20:	Very high: estimated 1 in 2 will develop disease.

Content Validity

Demographic performa was given to the two experts for validation. Measuring tape and weighing scale were calibrated. Finnish Diabetes Association Risk assessment tool is standardized tool for which permission was obtained by the author.

Methods of Data Collection

- Prior to data collection permission was obtained from the concerned authorities
- Purpose of conducting study was explained to subjects and written consent was taken from the participants.

The data collection was done in areas such as Kalai, Ammunje, Benjanapadavu from 11-01-2017 to 31-01-2017

Ethical Consideration

Ethical clearance was obtained through Institutional Ethics Committee A J Institute of Medical Sciences And Research Center to conduct study.

RESULTS

Section A: Demographic characteristics

This section describes the characteristics of sample which provides the background information of the subjects and has been presented in the form of frequency and percentages

Table no I Distribution of the sample according to demographic characteristics

N=800

Sl.No.	Demographic variables	Frequency(f)	Percentage(%)
1.	Age (in years)		
	a. 30 - 39	166	20.7
	b. 40 - 49	270	33.6
	c. 50 - 59	188	23.6
	d. 60 - 69	97	12.2
	e. >70	79	9.9
2.	Gender		
	a. Female	377	47.2
	b. Male	423	52.8
3.	Educational status		
	a. Illiterate	89	11.2
	b. Primary	249	31.0
	c. High school	246	30.9
	d. PUC	146	18.3
	e. Degree	69	8.6
4.	Occupation		
	a. Skilled	126	15.8
	b. Semi skilled	257	32.9
	c. Unskilled	229	27.7
	d. Housewife	137	17.2
	e. Unemployed	51	6.4
5.	Income		
	a. <7000	190	23.8
	b. 7000 - 8000	218	27.3
	c. 8000 - 10000	236	29.5
	d. 10000 - 15000	120	15.0
	e. >15000	35	4.4
6.	Diet		
	a. Mixed	743	94
	b. Vegetarian	49	6
7.	Marital status		
	a. Married	614	77.0

	b. Unmarried	71	8.9
	c. Widow/Widower	96	12.0
	d. Divorced	17	2.1
8.	Illness		
	a. Yes	139	17.4
	b. No	661	82.6

Section: B

Level of risk for type II diabetes mellitus in adults

Table No II Distribution of the sample based on the level of risk for type II diabetes mellitus.

N=800

Level of risk	Range of score	Frequency (F)	Percentage (%)
Low	Lower than 7	406	50.75
Slightly elevated	7-11	308	38.5
Moderate	12-14	49	6.125
High	15-20	37	4.625
Very high	Higher than 20	0	0

Range, mean, median and standard deviation of type II diabetes mellitus risk score of adults

Table No III Range, mean, median and standard deviation of type II diabetes mellitus risk score of adults.

N=800

Range of risk scores	Mean risk score	Median	Standard Deviation (SD)
0-20	6.99	6.50	3.78

Section-C

Association of level of risk for type II diabetes mellitus in adults with demographic variables

To compute the association of the level of risk for type II diabetes mellitus in adults with demographic variables chi-square test was used.

H₁ = There is a significant association of the level of risk for type II diabetes mellitus in adults with selected demographic variables.

H₀₁ = There is no association of the level of risk for type II diabetes mellitus in adults with selected demographic variables.

Table No IV Chi-square test showing association of level risk for type II diabetes mellitus in adults with selected demographic variables.

N=800

	Calculated Chi-square value	Table value	df	P value	Inference
Educational status	51.54	24.99	15	0.000	Significant
Occupation	34.42	21.03	12	0.001	Significant
Income	62.556	24.99	15	0.000	Significant
Marital status	31.110	21.03	12	0.002	Significant
Illness	14.642	9.49	6	0.00	Significant

df- degree of freedom P <0.05

DISCUSSION

In the present study highest percentage (52.8) were males and the least percentage (47.2) were females. This was supported by the findings of a similar study which was conducted to assess the risk for type II diabetes mellitus among rural population in Tamil Nadu, India by using Indian Diabetic Risk Score among 505 subjects above 20 years of age which showed that majority 55.2% (279 adults) were males and least 44.8% (226 adults) were females.⁴

In the present study highest percentage (31) of the sample had primary education and the least (8.6%) were graduates. This study was supported by a study which was conducted to assess the risk factors among type II diabetic population in South Malabar region of Kerala, India among 206 subjects which revealed that majority 40.29% had primary educational status and the least 1.94% had post graduation.³

In the present study highest percentage of the sample were at low risk level for type II diabetes mellitus. While comparing the present study results with a study conducted in Bangalore, India to assess the risk for type II diabetes mellitus among 238 adolescents which revealed that 5% (12 students) were in the high risk category, 42.9% (103) were in medium risk category and 52.1% (124) were in the low risk category¹

CONCLUSION

Study concludes that adults in selected villages are at slightly elevated risk for type II diabetes mellitus. Preventive measures can be under taken to prevent the occurrence of diabetes mellitus in adults such as awareness programs and screening camps can be conducted to detect the diabetes mellitus.

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