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DIABETES MILETUS IN ASSOCIATION WITH SOCIOECONOMIC STATUS IN SOUTH INDIAN POPULATION

Hemanth J.[1], Sravani N.[1], Sivanjineyulu G.[2] and Dr. Ishrar S. M. G.*[3]

[1]Residents Master Class Pharmacy, Raghavendra Institute of Pharmaceutical Education and Research, Autonomous, Anantapur, Andhra Pradesh, India.

[2]Student Master of Pharmacy, Raghavendra Institute of Pharmaceutical Education and Research, Autonomous, Anantapur Andhra Pradesh, India.

[3]Assitant Professor, Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research, Autonomous, Anantapur Andhra Pradesh, India.

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***Corresponding Author**
Dr. Ishrar S. M. G.
Assitant Professor, Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research, Autonomous, Anantapur Andhra Pradesh, India.

ABSTRACT

Diabetes mellitus is metabolic disease which is characterized by hyperglycemia. The objective of the present study was to know whether the income is associated with referral to a diabetes center within a universal health care system. Socioeconomic status (SES) is a major determinant of risk for diabetes mellitus. Developing countries has suggested that mostly due to less awareness programs, low education, low income being single. SES is a determinant of Quality of Life, depression medical comorbidites, medication adherence, and glucose control. Prospective observational study was conducted after getting consent from participitants of desired clinical symptoms. Several methods or scales have been proposed for classifying different population by socio economic status for this study we have chosen kuppuswamy scale to measure individual variability's. Present study the prevalence of diabetes is 0.0713. To our knowledge, the ICMR–INDIA study is the largest nationally representative study of diabetes in India. The cumulative data from 15 states presented here represent a total adult population of 363·7 million people (51% of India's adult population). The study found higher prevalence of undiagnosed DM in subjects having lower educational status; but no statistically significant association. Undiagnosed DM in this study was associated with alcohol consumption. On the other hand the study showed that smoking was not associated with the undiagnosed DM. finally concluded that prevalence

of diabetes is more when compared with female due to their habits and education qualification and income of the family and their physiological changes.

KEYWORDS: socioeconomic status, diabetes mellitus, Prevalence, quality of life.

INTRODUCTION

Diabetes mellitus is defined as a group of metabolic disease which is characterized by hyperglycemia of diabetes which is associated with high damage of various organs like pancreas, kidneys, eyes, heart, nerves etc.[1]

The person having the low income appears to be associated with a higher prevalence of diabetes and diabetes related complications.[2] The objective of the present study was to know whether the income is associated with referral to a diabetes center within a universal health care system. Socioeconomic status (SES) is a major determinant of risk for diabetes mellitushad confirmed Research from the United states, Canada and developing countries has suggested that mostly due to less awareness programs, low education, low income being single and minority status are all risk factors for diabetes mellitus.[3] Similartrends have been reported for prevalence and incidence distribution of diabetes mellitus in the community follows a social gradient, with the highest prevalence in the lowest socio economic status group, and then decline as SES increases .In addition to that, SES is also a determinant of diabetes mellitus complications and mortality.[4] Among patients with DM, SES is a determinant of QOL, depression medical comorbidities, medication adherence, and glucose control.[14]

Numerical Data: According to IDF (International Diabetes federation) SEA region India is one among the 6 countries. 425 million people have diabetes within the world and 82 million people within the SEA Region; by 2045 this may rise to 151 million. There were over 72 million cases of diabetes in India in 2017.[5]

Total adult population:829,491

Prevalence of diabetes in adults:8.8

Total cases of diabetes in adults:72,946.4

Statistical Data

Recent studies have shown a rapid conversion of impaired glucose tolerance to diabetes within the southern states of India, where the prevalence of diabetes among adults has

reached approximately 20% in urban populations and approximately 10% in rural populations have the diabetes. Because of the considerable disparity within the availability and affordability of diabetes care, also as low awareness among the disease, the glycemic outcome in treated patients is way from ideal. The economic burden of treating diabetes and its complications is considerable.[6,7,13]

METHODS AND MATERIALS

Study criteria

• Inclusion criteria: subjects suffering from diabetes mellitus.

• Age above 18

• Patients willing to join the study

Exclusion criteria

Children below the age of 18 years

Participants unmilling to join the study.

Study period: 4 months

Interested study participants were included in to the study after taking consent. Merits and demerits were explained prior getting consent from the study participants. By using data collection form all required demographic details and study data was collected. Later the data was analysed for type-1 and type-2, prevalence and incidence. Kuppuswamy scale was used to categories the participants in to different socioeconomic class based on score.

RESULTS

Sex

Variable	Male number (%)	Female number (%)	Total
Sex	58(58%)	42(42%)	100(100%)

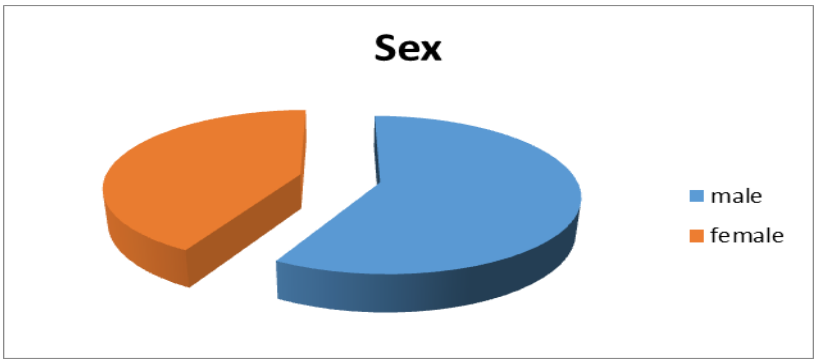

Fig. 1

Age (years)

Variable	Male number (%)	Female number (%)	Total
≤20 years	02 (02%)	01 (01%)	03 (03%)
21-30 years	09 (09%)	03 (03%)	12 (12%)
31-40 years	09 (09%)	05 (05%)	14 (14%)
41-50 years	10 (10%)	14 (14%)	24 (24%)
51-60 years	20(20%)	09(09%)	29(29%)
61-70 Years	02(02%)	02(02%)	04(04%)

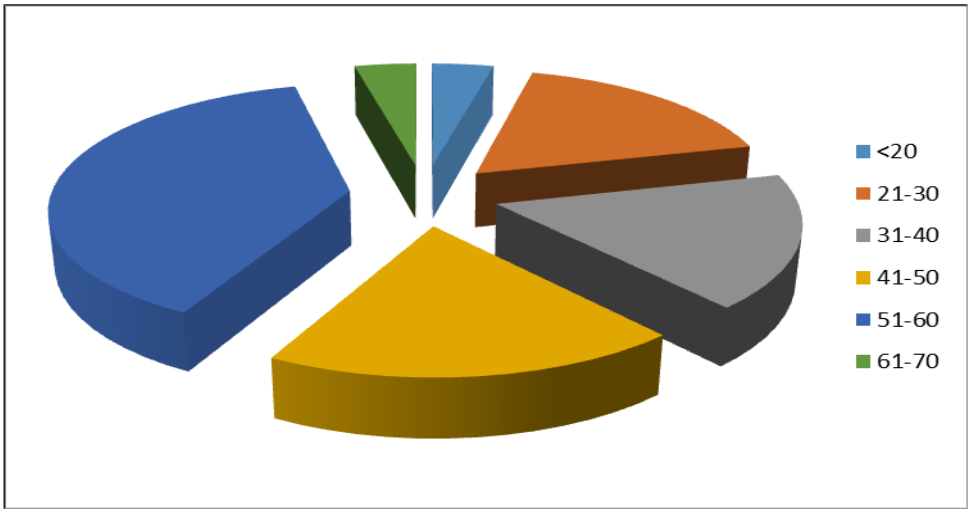

Fig. 2

Body weight

Variable	Male number (%)	Female number (%)	Total
20-40kg	03(02%)	02(02%)	05(05%)
41-60kg	35(35%)	29(29%)	64(64%)
61-80kg	15(15%)	10(10%)	25(25%)
81-100kg	05(05%)	01(01%)	06(06%)

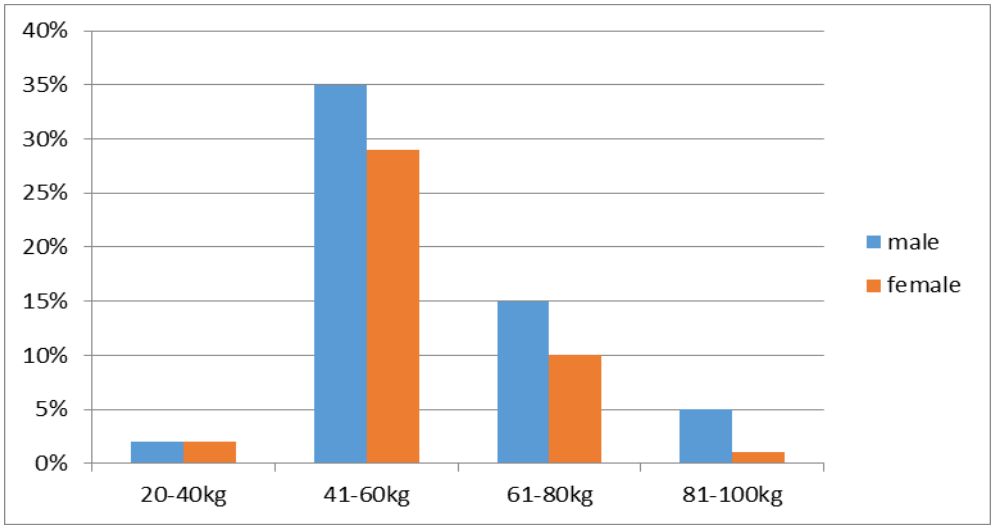

Fig. 3

Education

Variable	Male number (%)	Female number (%)	Total
Illiterate	41(41%)	30(30%)	71(71%)
Ssc/10th class	10(10%)	10(10%)	20(20%)
Intermediate	02(02%)	02(02%)	04(04%)
Graduation	05(05%)	0	05(05%)

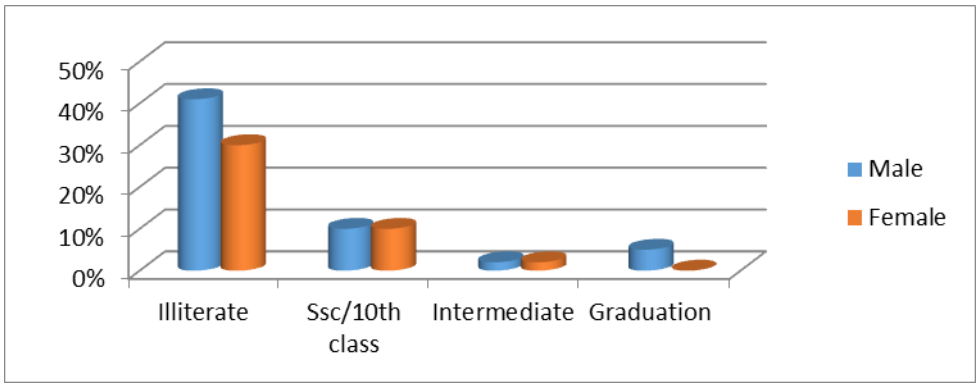

Fig. 4

Marital status

Variable	Male number (%)	Female number (%)	Total
Married	52(52%)	40(40%)	92(92%)
unmarried	06(06%)	02(02%)	08(08%)

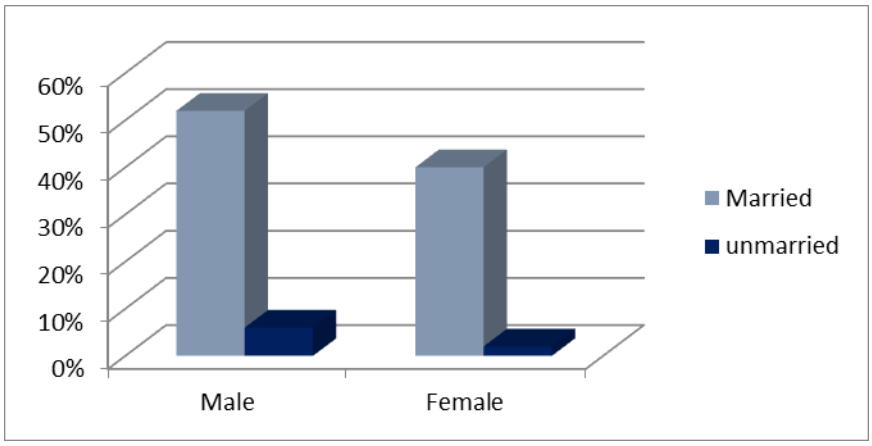

Fig. 5

Smoking

Variable	Male number (%)	Female number (%)	Total
Yes	45(45%)	0	45(45%)
No	13(13%)	42(42%)	55(55%)

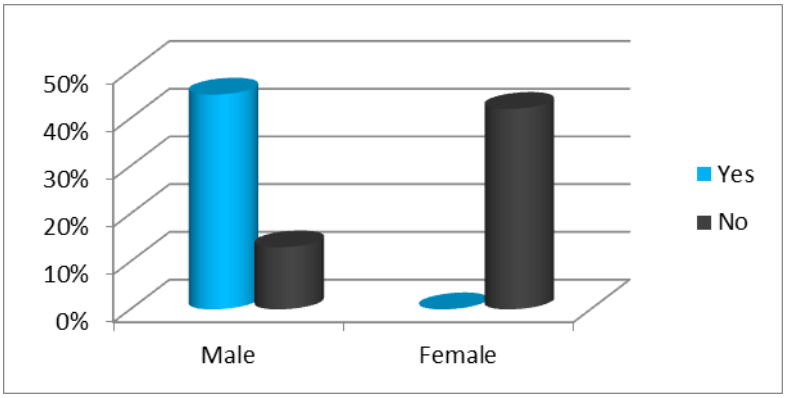

Fig. 6

Alcohol

Variable	Male number (%)	Female number (%)	Total
Yes	49(49%)	0	49(49%)
No	09(09%)	42(42%)	51(51%)

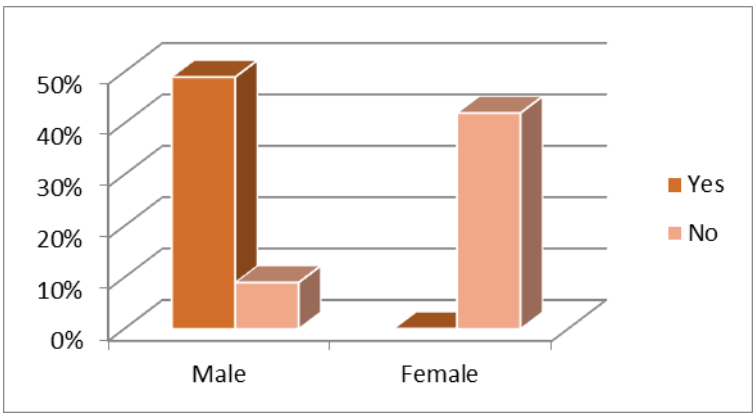

Fig. 7

Prevalence of diabetes mellitus

Prevalence type	Male number(%)	Female number(%)	Total
Prevalence	0.0413	0.0299	0.0713
Point Prevalence	0.0413	0.0299	0.0713
Time Prevalence	0.0308	0.0199	0.0571
Period Prevalence	0.0413	0.0299	0.0713

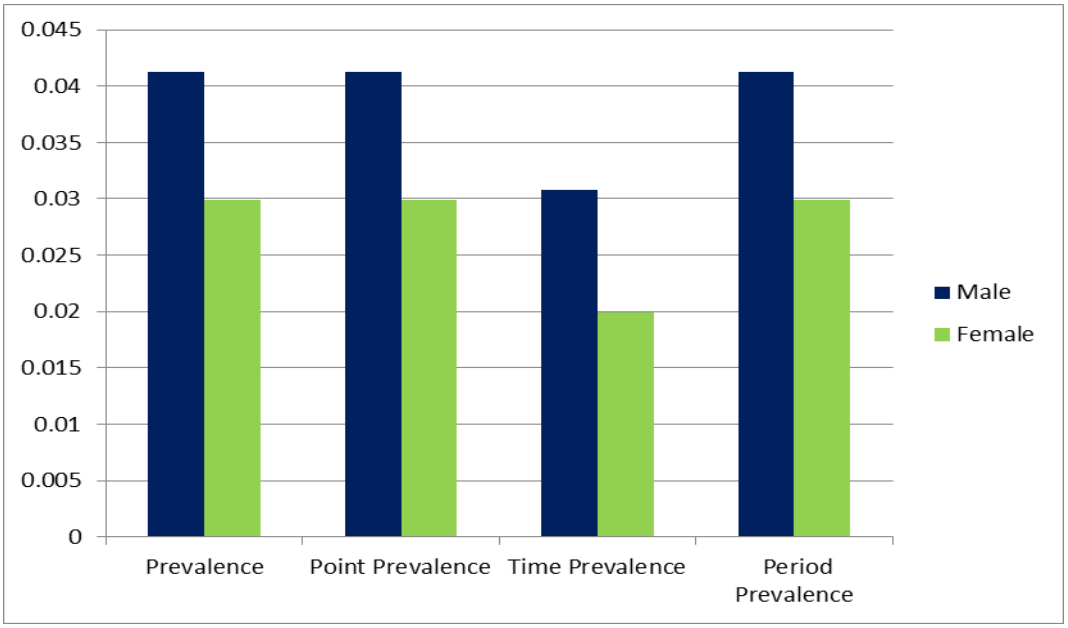

Fig: 8

Socio economic status

		Percentage (%)
Employment status	Employed	11
	employed	13
	Self employed	16
	unemployed	27
	retired	23
	student	10
Monthly house hold income	2000	19
	2000-4000	17
	4001-6000	26
	>6000	38

DISCUSSION

In the present study the prevalence of diabetes is 0.0713. To our knowledge, the ICMR–INDIA study is the largest nationally representative study of diabetes in India. The cumulative data from 15 states presented here represent a total adult population of 363·7 million people (51% of India's adult population). We estimated the overall prevalence of diabetes in India to be 7·3% and the prevalence of prediabetes to be 10·3% (WHO criteria) or 24·7% (ADA criteria), depending on which definition was used.[8,9] The global prevalence of diabetes in 2014 was 9% among adults over 18 years of age. It is also estimated that about 2 percent of the general population of Iran and 7.3 percent of people over 30 have diabetes. This disease is associated with multiple short-term and long-term complications, which in many cases is not reversible. The study found higher prevalence of undiagnosed DM in

subjects having lower educational status; but no statistically significant association. Undiagnosed DM in this study was associated with alcohol consumption. On the other hand the study showed that smoking was not associated with the undiagnosed DM.[10]

CONCLUSION

Considerable disparity in the availability and affordability of diabetes care as well as low awareness among the disease the glycemic outcome in treated patient is far from ideal. The economic burden of treating diabetes and its complications is considerable.

Type two diabetes milletus is more common in developed countries. The risk of getting type-2 diabetes has been widely found to be associated with lower socioeconomic position across countries.[11]

Currently India had more diabetic people than any other country in the world. Nearly one million Indians die due to diabetes every year India became a home to second largest number of children with type one diabetes in the world high incidence is attributed to a combination of generic susceptibility plus adoption of a high calories low activity life style by Indians growing middle class.[12]

The health status of a country depends on socio economic status and the percapita income of the citizen of that country.

Several methods or scales have been proposed for classifying different population by socio economic status for this study we have choosen kuppuswamy scale to measure the SES of an individual based on variabilities namely, Education, occupation and income of the family.

From the above statistical data, the prevalence of diabetes milletus in association with socio economic status in rural setup of south India were more due to lack of awareness about the diabetes and their changing food habits and low socio economic status. By these study we concluded that prevalence of diabetes is more when compared with female due to their habits and education qualification and income of the family and their physiological changes.

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We clearly declare no conflict of interest.

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