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### AN OBSERVATIONAL STUDY ON THE ETIOLOGICAL FACTORS OF DIABETES MELLITUS IN SOME VILLAGES OF SOUTH INDIA

Poornachand Tadiseti\*, Kishore Kumar.Yadla, Gnana Deepak .B, Vivekreddy .T, Sharmila Nirojini .P,  
Dr. Rama Rao Nadendla

Chalapathi Institute of Pharmaceutical Sciences, Lam, Guntur, Andhra Pradesh, India.

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#### ABSTRACT

Background: Diabetes has become a major health care problem in India with an estimated 66.8 million people suffering from this condition and the level of morbidity and mortality due to diabetes and its potential complications are enormous, and pose significant healthcare burdens on both families and society, so it is very important to know about the etiological factors of this disease. Aim & Objectives To monitor the etiological factors of diabetes among the masses in rural settings. Methodology Observational study from December 2016 to May 2017. Results and Findings The findings among the study population includes the overall diabetic subjects constitute about 44.38 per cent and the various etiological factors of this study population includes the following 17.08 % (n=96) are showing the history of stress, 22.24 % (n=125) subjects have the family history of diabetes, 20.64 % (n=116) subjects has presented the condition of obesity, 26.51 % (n=149) subjects also the history of hypertension along with diabetes and 13.52 % (n=76) subjects are not having the physical activity and from all the above findings it is clear that most of the patients are experiencing the condition of diabetes mainly due to stress, so to avoid such tensions one should practice alternative system of medicines like Yoga and Meditation so to avoid various pathological conditions of endocrine origin. Conclusion: Based on the study results it is clear that there are various reasons that are prevailing before the onset of the disease and which directly shows impact on health related quality of life and the budding health care professionals should have the sound knowledge regarding this aspects for better health care and this sort of works recommends future research in many aspects.

#### Corresponding author

##### Poornachand Tadiseti

VI/VI Pharm.D,

Department of Pharmacy Practice,

Chalapathi institute of pharmaceutical Sciences,

Lam, Guntur-522034, Andhra Pradesh, India.

8121123534,9494495331

poorna1761995@gmail.com

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## INTRODUCTION

The conduct of this sort of studies in rural areas shall act as the eye opener for the health care regulatory authorities because any sort of study in the rural settings shall clearly depict the crystal clear picture of the real problems of the nation and shall help to strengthen from the ground level so that the healthy life span of the individuals can be enhanced by spreading the fragrance of blossoming flowers across the global village.

The conduct of this sort of epidemiological research works regarding the common ailments that are the global burden like Diabetes mellitus (DM) shall helps to bring a sea change in the attitude of the people towards the health in the present scenario and also helps in developing the crystal clarity regarding the various etiological factors of the condition of Diabetes and plays a pivotal role in the prevention of the risk factors for the precipitation of the pathological conditions.

## CURRENT STATUS OF DIABETES IN THE INDIAN SCENARIO:

There are, however, patterns of diabetes incidence that are related to the geographical distribution of diabetes in India. Rough estimates show that the prevalence of diabetes in rural populations is one-quarter that of urban population for India and other Indian sub-continent countries such as Bangladesh, Nepal, Bhutan, and Sri Lanka. (3,5) Preliminary results from a large community study conducted by the Indian Council of Medical research (ICMR) revealed that a lower proportion of the population is affected in states of Northern India (Chandigarh 0.12 million, Jharkhand 0.96 million) as compared to Maharashtra (9.2 million) and Tamil Nadu (4.8 million). (5)

## AIMS AND OBJECTIVES OF THE STUDY :

The aim of our study is to study various etiological factors for the condition of DM and the objectives of our study are to differentially identify the causes and to provide the specific counseling based on the risk factor involved in precipitating the condition of diabetes

## MATERIALS AND METHODS:

Observational study from December 2016 to May 2017 and assessed the results by the help of statistical tools like Microsoft Excel and Graph pad Prism version (5.04)

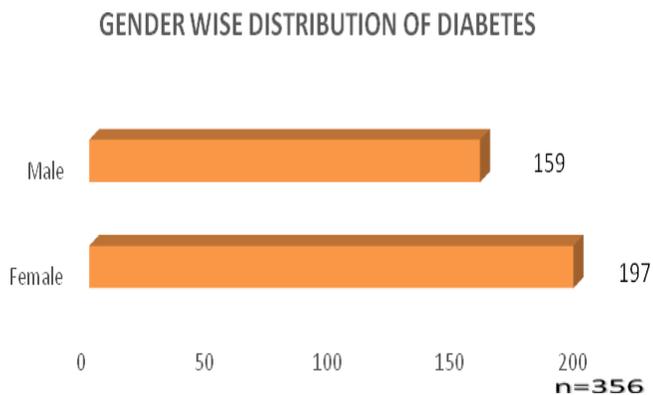
## RESULTS AND FINDINGS:

Eventually by assessing various parameters we got the following percentage of results among the study population, Screened about 15000 population of 6 villages in South India and the findings are as follows,

- People who met our criteria is 802
- Subjects who are diabetic is 356/802
- Subjects who are diabetic + hypertensive is 146/562
- Subjects with stress as etiological factor is 96/562
- Subjects with family history of diabetes is 125/562
- Subjects with condition of obesity is 116/562
- Subjects with lack of physical activity is 76/562

**Table 1: Gender wise distribution of diabetes among the study population.**

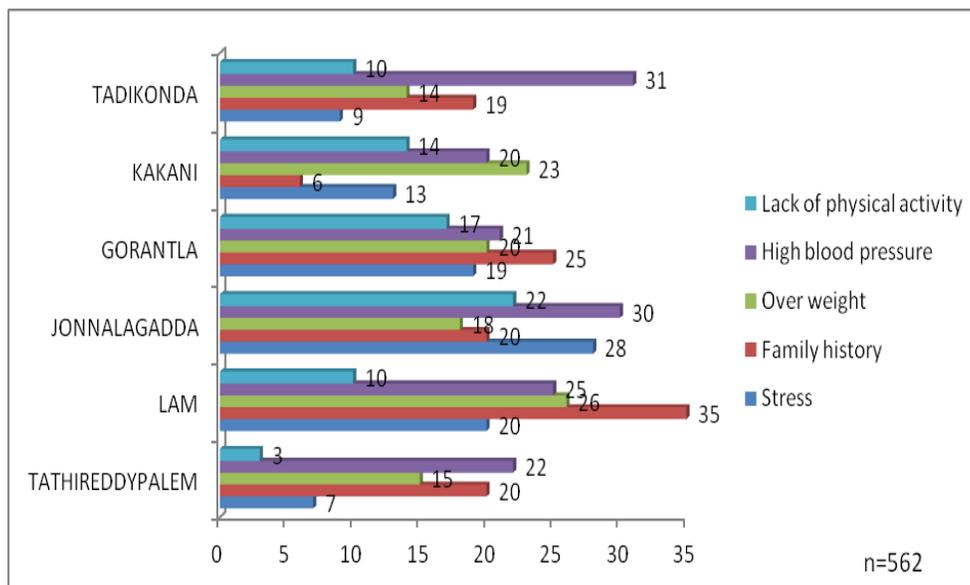
GENDER WISE DISTRIBUTION	NUMBER
Male	159
Female	197



**Figure 1: Gender wise distribution of diabetes among the study population and this shows that 44.66 % (n=159) of subjects are male diabetic and 55.33 % (n=197) subjects are female diabetic and the co morbidities are not included in the above groups.**

**Table 2: Various etiological factors of diabetes among different villages.**

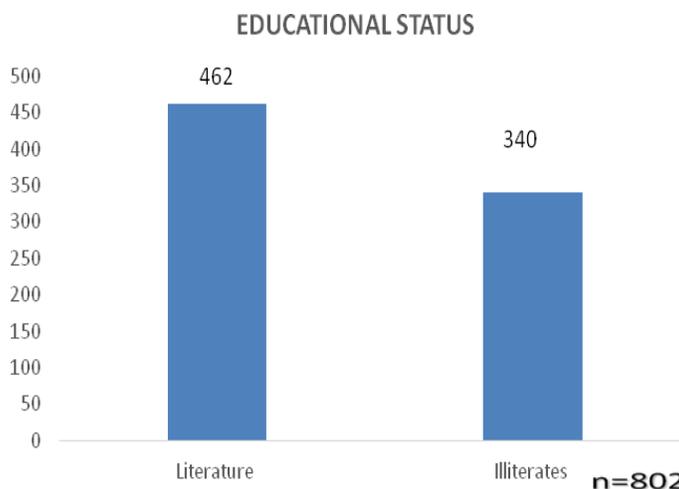
ETIOLOGICAL FACTORS	TTR.PALEM	LAM	J.GADDA	GORANTLA	KAKANI	T.KONDA
Stress	07	20	28	19	13	09
Family history	20	35	20	25	06	19
Over weight	15	26	18	20	23	14
High blood pressure	22	25	30	21	20	31
Lack of physical activity	03	10	22	17	14	10



**Figure 2:** This shows the various etiological factors among the study population and this shows that 17.08 % (n=96) are showing the history of stress, 22.24 % (n=125) subjects have the family history of diabetes, 20.64 % (n=116) subjects has presented the condition of obesity, 26.51 % (n=149) subjects also the history of hypertension along with diabetes and 13.52 % (n=76) subjects are not having the physical activity

**Table 3: Educational status among the study population.**

EDUCATIONAL STATUS	NUMBER
Literates	462
Illiterates	340

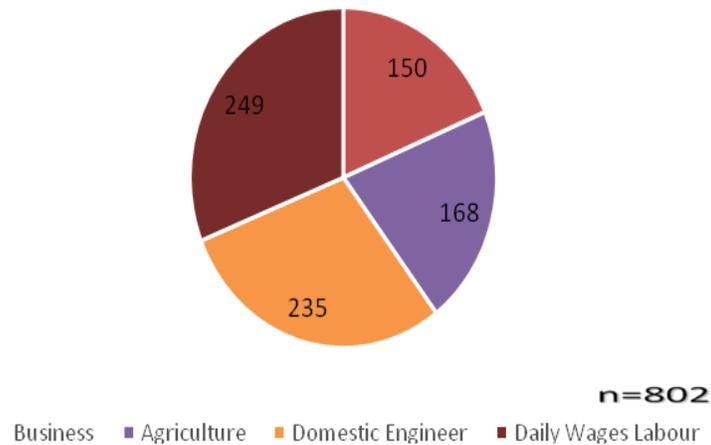


**Figure 3:** Educational status among the study population and this shows that 57.60 % (n=462) of subjects are literates and 42.39 % (n=340) subjects are illiterates. The educational status also plays a pivotal role in the prognosis of disease.

**Table 4: Occupational status among the study population.**

OCCUPATIONAL STATUS	NUMBER
Business	150
Agriculture	168
Domestic engineer	235
Daily wage labour	249

## OCCUPATIONAL GROUPS



**Figure 4: Occupational status among the study population and this shows that 18.70 % (n=150) of subjects are doing the occupation of business, 20.94 % (n=168) of subjects are doing agriculture, 29.30 % (n=235) of subjects falls under the category of domestic engineer and 31.04 % (n=249) subjects falls under the category of daily wage labour and determination of the occupation also plays a great role in assessing the pathology of occupational diseases.**

## DISCUSSION

Nearly half of people with diabetes remain undetected, accounting for complications at the time of diagnosis. Screening can differentiate an asymptomatic individual at high risk from one at low risk for diabetes and the various aspects of our observational study includes a total of 802 subjects were recruited in to the study population based on the inclusion criteria and in present study 159 male subjects (44.66%) and 197 female subjects (55.33%) are having the history of alone Diabetes and this details are clearly mentioned in Table 1 and explained in Figure 1 and this findings are similar to the study conducted by Patandin S et al<sup>(1)</sup>. The various etiological factors of this study population includes the following 17.08 % (n=96) are showing the history of stress, 22.24 % (n=125) subjects have the family history of diabetes, 20.64 % (n=116) subjects has presented the condition of obesity, 26.51 % (n=149) subjects also the history of hypertension along with diabetes and 13.52 % (n=76) subjects are not having the physical activity whereas the results of the study conducted by Raman Kutty V et al<sup>(3)</sup> are differing with the present study and along with this aspects of diabetes other aspects relating to the cause of the diabetes like consuming more sweets and other eminent aspects like the dwelling areas of the masses should be considered so to determine the idiopathic factors behind the cause of diabetes and the findings of the various studies should be correlated for better research in field of diabetes and shall helps in bringing the sea change in the Quality Of Life (QOL) of the patients.

## CONCLUSION

Based on the results we conclude that the determination of various etiological factors of the condition like diabetes shall help to bring awareness from the grass root level like rural areas and this shall play a pivotal role in the reduction of incidence of diabetes and prolongs the healthy life span. Thus, this sort of novel research studies should be performed to have the crystal clarity of the rural areas of our nation where the real problems do exist and improves the Diabetic Quality Of Life (DQOL). Eventually this sort of works recommends future research for better results

## LIMITATIONS OF OUR STUDY:

1. Sample collection is a bit difficult due to occupational status of the study population.

## FUTURE IMPLICATIONS:

1. Planning to extend to other remaining villages in South India.
2. Planning to work together with the government authorities and other reputed organizations.

## LIST OF ABBREVIATIONS USED:

ADA	-	American Diabetes Association
ADRs	-	Adverse Drug Interactions
BMI	-	Body Mass Index
DM	-	Diabetes Mellitus
DQOL	-	Diabetic Quality Of Life
ICMR	-	Indian Council of Medical research
QOL	-	Quality Of Life

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## CONFLICT OF INTEREST:

We declare no conflicts of Interest

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