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ASSESSMENT OF BLOOD GLUCOSE VARIATIONS AND DIABETES MELLITUS AMONG LINGAYAT AND VALMIKI COMMUNITIES OF MANSUR VILLAGE IN DHARWAD DISTRICT, KARNATAKA

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ABSTRACT The rapidly growing capitalistic and technological innovations have made drastic changes in the health status of both rural and urban societies. India is a developing country has faced many risks and complications associated with both communicable and non-communicable diseases for several decades. Diabetes mellitus (DM) is of the non-communicable disease. Nowadays in rural populations, health complications associated with Diabetes Mellitus are increasing rapidly day by day due to the changes in the lifestyle and dietary habits of the individuals for several years. The conducted study aims to assess the blood glucose variations and Diabetes Mellitus among Lingayat and Valmiki communities in Mansur Village. Anthropological traditional fieldwork knowledge and approaches like observation, participant observation; informal interviews are utilized in this study.

KEYWORDS : Blood Glucose, Diabetes Mellitus, Insulin, Mansur.

INTRODUCTION

In nature, the modern and sedentary living styles have made human beings more sluggish and are invited many complications, diseases in society. Nowadays increased health complications from non-communicable diseases made huge challenges to human populations and are due to more influences of lifestyles and dietary ways that make the disease far more common in economically developing countries.[5] Diabetes mellitus is one of the contemporary serious global health problems and caused many severe health complications all over the world. According to the estimation of WHO in 2014, there were 422 million adults with diabetes throughout the world, which has expanded since 1980 and is predominant more among adults. [7,16] According to 2015 WHO data nearly about 69.2 million people were living with Diabetes and all over the world about 381 persons (among the 1000 people) are suffering from health complications from diabetes.[12] Diabetes is closely associated with the epidemic of obesity.[4] and the increase appears to be primarily coupled with rising rates of obesity and is increasing in undeveloped and underdeveloped countries.[3] Indian subcontinent being a developing nation has faced various problems associated with communicable and non-communicable diseases from several years. These are caused due to the rapid capitalistic and technological growth that have made drastic changes in the health status of the rural and urban society.

Nowadays in India, recent studies and surveys spread light on the complications triggered by Diabetes and have shown that Diabetes Mellitus has affected 5-8% of the rural population of India and gives the impression of the epidemic being transpiring in the rural area's day by day rapidly.[13,9] Despite the high occurrence of Diabetes, and is a major cause of increased risks of mortality rates in different populations due to undiagnosed.[15] and by knowing the importance of rapidly spreading diabetes mellites pandemic in the rural population and which forms about 70% population of India. Today in India majority of the health complications are caused by cardiovascular diseases, psychological illness, diabetes, and other disorders.[1] and have become the land of diabetic patients of the world. Diabetes Meletus is a commonest non-communicable disease and health complications related to diabetes are growing rapidly in India almost a decade earlier as compared to developed and underdeveloped countries[11] In 2011 International Diabetic Federation has reported the worldwide occurrence of Diabetes Mellitus among adults is 8.3% and which is projected to increase up to 9.9% by 2030.[10] and 592 million (10.1%) by 2035.[5] Generally, there are two types of Diabetes as Insulin-Dependent Diabetes Mellitus (Type-1) and Non-Insulin Dependent Diabetes Mellitus (Type-2).

Insulin-dependent diabetes mellitus (Type-1) occurred due to the pancreas being unable to produce an additional amount of insulin in our body, which leads to an increase in the concentration of glucose in the bloodstream and is considered by the presence of beta-cell autoantibodies.[14] Incidence of insulin resistance in type 1 Diabetes Mellitus is increasing.[14] It is a disorder of glucose homeostasis characterized by autoimmune destruction of the insulin-producing pancreatic b-cell that progressively leads to insulin deficiency resulting in hyperglycemia and if left untreated the insulin deficiency leads to progressive metabolic derangement, with worsening hyperglycemia, diabetic acidosis, starvation, and death.[6] Type-2 Diabetes Mellitus is closely linked with the epidemic of obesity. Individuals with type-2 diabetes are at high risk for microvascular complications (retinopathy, nephropathy, neuropathy) and macrovascular complications (cardiovascular comorbidities). Owing to hyperglycemia (high blood glucose) and the specific components of insulin resistance metabolic disorder. These are caused by environmental factors such as obesity, unhealthy diet, physical inactivity. Several genetic factors also contribute to the multiple pathophysiological disturbances that are responsible for impaired glucose homeostasis in type-2 Diabetes Mellitus and impaired insulin secretion remains as the core defect.[4]

Both forms of Diabetes are associated with a wide variety of health complications like cardiomyopathy, nephropathy, and neuropathy. Although insulin resistance has traditionally been associated with type 2 diabetes.[14] non-Insulin-dependent diabetes mellitus is controlled by candidate genes and combined with many genetic factors and their interactions with the environments like food and lifestyles. It is managed by maintaining the glucose level in our body by doing appropriately balanced food intake, medication, meditation, and physical exercise in time.[2]

Keeping the above background in mind, the present paper aims to assess the Blood Glucose variation and Diabetes Mellitus among the Lingayat and Valmiki communities of Mansur Village in Dharwad, Karnataka state.

MATERIALS AND METHODS

In the year 2015-2016 Karnatak University, Dharwad in the State of Karnataka adopted the Mansur village for numerous development activities in the fields of Socio-cultural, Economic, Education, Health, etc. Mansur village is located 7 km away from Dharwad district headquarter in Karnataka State and birthplace of great Hindustani classical singer, vocalist Swara Samrat Pandit Mallikarjun Mansur. According to the 2011 census, the total population of the Mansur village is 2366 (1205 men and 1161 women). Numerous religious, caste, and community groups such as Lingayat associated sects, Harijan, Kuruba, Valmiki, and Muslims where reside in this village. Lingayat's are the dominant community as compared to Kuruba and Valmiki. People are engaged in the occupations like agriculture, wage labor, working in the factories, business, and pursuing education. Jowar roti, maizgraine roti, chapati, rice, dhal, egg, chicken, mutton, fish are their staple foodstuffs and are both vegetarian and non-vegetarians. However, majority of them prefer to consume vegetarian foods.

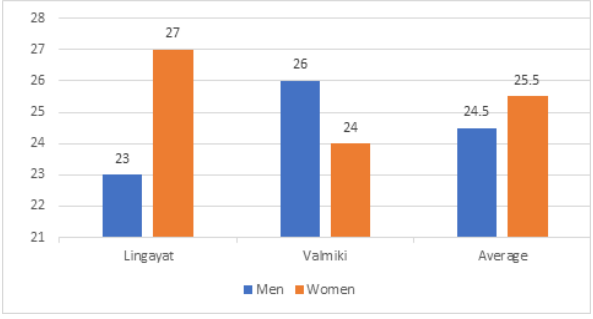
Anthropological technique such as observation, participant observation, and informal interviews were adopted to grasp the nuances of the village and its people. The multistage sampling methods was used during sample data collection. The District, Village, and communities were selected based on the purposive sampling technique. The simple random technique was used for selecting the individual samples. Omnibus interview schedules were used for gathering information.

The detailed information on demographic data viz. education, occupation, annual income, dietary patterns, type of house, agricultural land, type of family, socio-economic status, etc. of both the communities were collected. The digital glucometer of ACCU-CHEK ACTIVA of Roche Diabetes care company (0.5 mg/dL blood sample) device is used to check the blood glucose concentration levels and the self-monitoring device mainly focused on tracking the sugar levels and managing diabetes for both type 1 and type 2 diabetic patients. The portable machine has a small digital monitor and a slot for inserting the disposable testing strip. The small window of the test strip has made contact with a drop of blood of the subject. Within a few seconds, the results were displayed on the monitor and the random readings were recorded. In the present study, a total of 100 samples collected from both the communities -50 samples each from Lingayat and Valmiki community by considering the age group ranges from 20 to 80 years and above. Average, percentage, and frequency of data were analyses to understand the variation of blood glucose levels among the study population.

RESULTS AND DISCUSSION

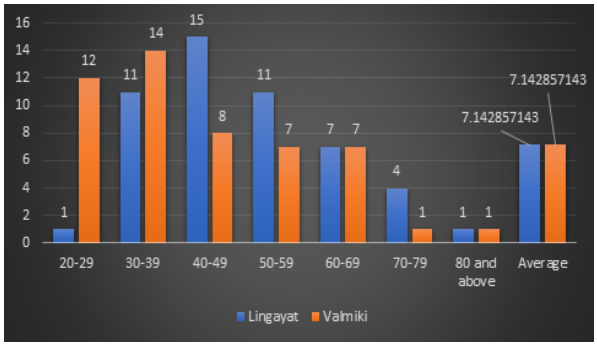
The samples collected and analysis of the data are presented in the following Bar Graphs below.

Bar Graph-1: Distribution of collected samples according to their Community and Gender



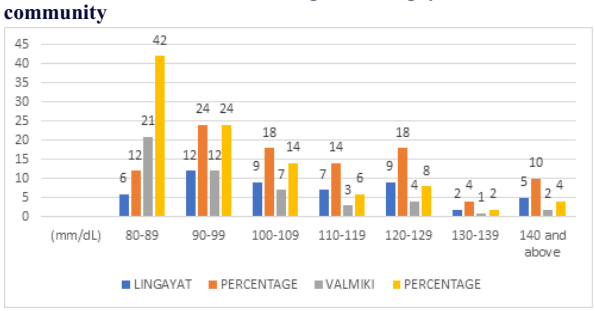
Bar graph-1 shows the total distribution of samples collected along with the consideration of gender. The present study consists of total 100 samples out of which 50 individuals from Lingayat with Men and Women samples 23 (46%) and 27(54%) with an average of 24.5 and 50 individuals from the Valmiki with Men and Women samples 26 (52%) and 24 (48%) with an average of 25.5 are considered for the study.

Bar Graph-2: Distribution of collected samples according to their Age and Community



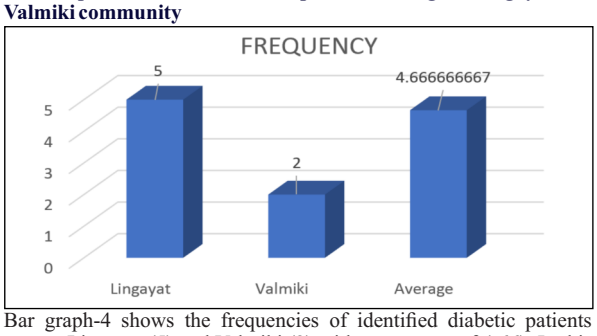
Bar graph-2 shows the total distribution of samples according to their age and are ranging from 20 to 80 and above years of the age group of individuals. Distribution of samples from the different age groups in Lingayat community 20-29(1), 30-39(11), 40-49(15), 50-59(11), 60-69(7), 70-79(4), and 80 years and above (1) with an average of 7.14. Distribution of samples from the different age groups in Valmiki community 20-29(12), 30-39(14), 40-49(8), 50-59(7), 60-69(7), 70-79(1), and 80 years and above (1) with an average of 7.14.

Bar Graph-3: Distribution of collected samples according to Blood Glucose variation levels among the Lingayat and Valmiki community



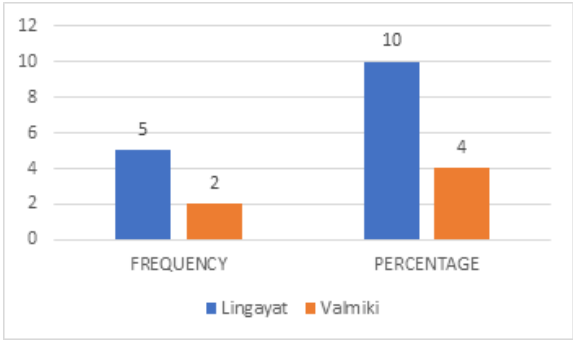
Bar graph-3 shows the distribution of the blood glucose sugar variation levels among the studied Populations of Lingayat and Valmiki at different levels. Blood glucose sugar concentrations range from 80-250 mm/dL. In Lingayat 80-89(6) with 12%, 90-99(12) with 24%, 100-109(9) with 18%, 110-119(7) with 14%, 120-129(9) with 18%, 130-139(2) with 4%, and 140 and above (5) with 10%), and In Valmiki 80-89(21) with 42%, 90-99(12) with 24%, 100-109(7) with 14%, 110-119(3) with 6%, 120-129(4) with 8%, 130-139(1) with 2%, and 140 and above (2) with 4%.

Bar Graph-4: Identified Diabetic patients among the Lingayat and Valmiki community



Bar graph-4 shows the frequencies of identified diabetic patients among Lingayat (5) and Valmiki (2) with an average of 4.66). In this study, 7 samples are identified as Diabetic.

Bar Graph-5: Comparison between the identified Diabetic patients among the Lingayat and Valmiki community



Bar graph-5 shows the distribution of the identified diabetic patients among the Lingayat (5 with 10%) and Valmiki (2 with 4%).

The results of the present study reveal from the assessment of the Blood Glucose variations and the prevalence of Diabetes Mellites among the studied population in the Mansur village. It was found that 7 people are prone to the disorder of Diabetes Mellites. In Lingayat (5) and Valmiki (2) with 14.00 % (Lingayat (10%) and Valmiki (4%).

CONCLUSION

Nowadays in rural populations, the health complications associated with Diabetes Mellites are increasing rapidly day by day due to the changes in the lifestyle and dietary habits of the individuals for several years. Diabetes Mellitus (DM) can be managed by maintaining the blood glucose level in our body by doing appropriate consumptions of balanced food intake, medication, meditation, and physical exercise in time.

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