Prevalence of Diabetes among Residents of Theed Area of District Srinagar: A Descriptive Study

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Abstract: *Diabetes Mellitus is a group of metabolic disorder of carbohydrate metabolism characteristics by high blood glucose levels, and usually caused by insufficient production of insulin or its response on target cells. The rate of diabetes diagnosed is increasing around the world including in India. The estimated number of diabetes in the age group of 20-79 is 74.2 million in 2021 and is likely to increase to 124.8 million in 2045 as said by Union Minister Mandaviya to the Lok Sabha 03 December 2021. Methods: sample size of 135 was taken out of 4756 population aged above 30 and more in this area calculating by the prevalence of diabetes 10%, data collection was done on the basis of random Blood Sugar levels by using glucometer and was categorized as per classification. The data was version 23. Results: overall prevalence of diabetes was found to be 9.8% among the population of Theed Srinagar district, in the age group of 30 and more.*

Keywords: prevalence of diabetes

1. Introduction

Non-communicable diseases (NCDs) are becoming major health challenges with continually increasing burden [1]. Diabetes mellitus is one main segments of chronic non-communicable diseases [2]. In 2000, 60% of deaths and 43% burden of diseases in the world were due to NCDs [3]. Prediction made indicated that the burden of NCDs will increase about three-quarter of all deaths and 60% of all diseases globally by the year 2025 [4]. As reported by International Diabetes Federation (IDF), approximately 75–80% of people with diabetes die due to cardiovascular complications [5].

All countries, irrespective of their economic developmental, epidemiological and demographical variability, are facing an increasing burden of non-communicable diseases including diabetes mellitus [4]. Diabetes mellitus with other NCDs are responsible for an increasing burden of diseases in developing countries. In Sub-Saharan Africa, NCDs are predicted to exceed infectious diseases by the year 2030 [6]. It has been projected that the number of people with diabetes will increase to 300 million by 2025 and 366 million by 2030 from 171 million in 2021 and India contributes one third of that i. e 74.2 million and expected to be 124.8 million in 2045. The majority of these numerical increments will occur in developing countries [7–9]. Type 2 diabetes mellitus accounts for over 90% of diabetes and this proportion is higher if it is adjusted for older and urban population [10].

Studies around the world reported different level in the prevalence of diabetes mellitus. In Guatemala, the prevalence of diabetes was 8.4% where almost half of them (4.1%) were newly diagnosed [11]. In Bangladesh, a higher prevalence of diabetes was found among females, old age, centrally obese and urban dwellers [12]. A study conducted in Korea reported that 21.8% and 15.3% of participants had impaired fasting glucose level (IFG) and diabetes respectively [13]. The World Health Organization (WHO) estimated that the prevalence of diabetes in Kenya will rise from 3.3% in 2000 to 4.5% by 2025. The prevalence of diabetes mellitus type 2 in African countries ranged from 1% in rural Uganda [10] to 12% in urban Kenya. Screening studies found significant proportions (> 40%) of diabetic cases who were previously undiagnosed [10, 14]. WHO reported that there were about 800, 000 people having diabetes in Ethiopia in 2000 and the number is expected to escalate to 1.8 million by the year 2030 [15].

A community based comparative study in Gondar found that the prevalence of diabetes mellitus among adults aged 35 years and above was 3.6%, while it was 5.1% for urban and 2.1% for rural dwellers. The majority (69%) of diabetic cases were newly diagnosed; with the highest proportion (82.6%) in rural residents [16].

- Consumption of calorie-dense foods, sedentary lifestyle, tobacco consumption, older age, family history of diabetes and use of antiretroviral medications were the identified risk factors for metabolic syndrome [16, 17]. Another study from southern Ethiopia found that hypertension, central obesity, and overweight had a strong association with diabetes mellitus [17].

- The burden of diabetes and diabetes-related mortality and disability are rising in India. Sedentary lifestyles coupled with growing urbanization cultures and processed diets are predicted to triple the prevalence of diabetes mellitus in the coming 25 years involving young populations too [18, 19]. In India, national data on prevalence and incidence of diabetes are lacking. However, patients attendances and admission rates due to diabetes mellitus are rising in hospitals. In the previous 2–3 decades, there have been observable lifestyle changes with significant population growth and urbanization which are the main risk factors repeatedly reported.

2. Methods and materials

- Community based comparative cross-sectional study was conducted among individuals aged 30 years old and above in 2021. Pregnant, mother in post-partum period (6 weeks after delivery), disabled and sick individuals during data collection period were excluded from the study. A household NCD STEPS survey was done in the area, a sample size of 135 was taken out of 4756 population aged 30 and more by calculating the prevalence of diabetes 10% in block Hazratbal district Srinagar.
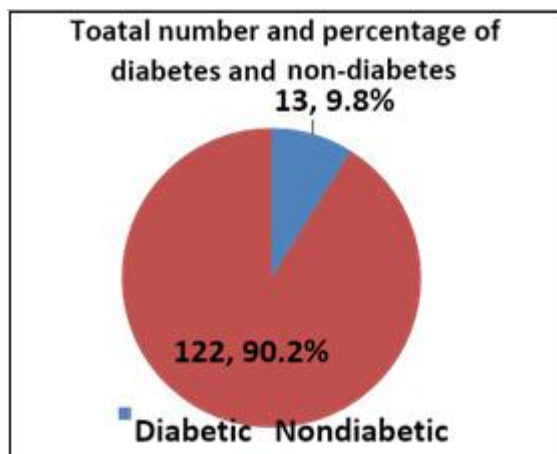
- Random blood sugar was done during this study using Aquachek Glucometer with 94.6% accuracy
- High blood glucose level was noted Random blood sugar tests.
- Normal: <= 140 mg/dl,
- Prediabetes: 140-199 mg/dl
- Diabetes: > 200 mg/dl

3. Results

Toatal number and percentage of diabetes and non-diabetes

The overall prevalence of Diabetes in our study population was 9.8%, out of which 6.5% were known diabetic and 3.4% were undiagnosed diabetic subjects. This is higher than earlier studies from same area by Bhat NA et al and Zargar AH et al [20] in which prevalence was 2.02% and 1.89% respectively. This difference could be explained, because of increasing stress in valley due to turmoil, change in life style, and age composition of the selected population of earlier studies. In the study done by Zargar et al [21], chosen population was males and non-pregnant female adults ≥ 40 years old revealed that, a) 1.89 % (1.98% males and 1.77% females) had diagnosed DM,

4. Recommendations

- Frequent FDG should be conducted on diabetes
- Education about adherence to medicines
- Routine blood glucose levels checkups fasting and postprandial and quaterly HbA1c
- Regular exercise and demonstration of foot care, using of diabetic shoes
- Routine health checkups at nearest health centers
- Separate NCD OPDs at health centers
- Monthly visit of endocrinologist at health centers

5. Limitations

The study had few limitations. Firstly this being a cross-sectional study, prevents us from drawing casual inferences. Secondly, measurement of blood glucose was done by a glucometer device instead of venous blood glucose estimation due to logistic constrains. However, regular quality control check on blood glucose was done in reference laboratory as per the manufacturer's instructions.

6. Conclusion

The prevalence of diabetes is showing rising trend in Kashmir valley, the life style changes and aggressive control of the risk factors are urgently needed to tame this trend

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