



SOCIOECONOMIC STATUS AND INCIDENCE OF TYPE –II DIABETES

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ABSTRACT

Diabetes is often referred to Diabetes Mellitus, a group of metabolic disease characterized by hyperglycemia resulting from defects in insulin secretion, insulin action or both. The risk of type 2 diabetes (T2DM) increases with lower socioeconomic position. Hence, people with low educational level, low income level, low occupational status or people with adverse socioeconomic conditions have higher risk of developing T2DM than people with higher socioeconomic position. Diabetic individuals spending more money towards high quality health care treatment or reducing the progression of diabetic related complications. Prevention seems to be the need of the hour to tackle this epidemic issue. This article highlights the social and economic implications of diabetes in India and emphasizes the measures required to prevent diabetes.

KEYWORDS: *Diabetes mellitus, socioeconomic status, Education level, Income level, Hyperglycemia*



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INTRODUCTION

Diabetes Mellitus has become a major global health challenge in the present century. According to the International Diabetes Federation in 2015, about 415 million people worldwide or 8.8% of the adults aged between 20 & 79 years suffers from Type 2 DM. This number is likely to rise around 642 million people by 2040¹. Moreover, according to the diabetes forecast, the largest increases in diabetes onsets will be in the low- and middle-income countries¹. The global increase in the prevalence of diabetes is due to population growth, aging, urbanisation and an increase of obesity and physical inactivity. The primary determinants of the epidemic are the rapid epidemiological transition associated with changes in dietary patterns and less physical activity. This could have long-lasting adverse effects on the health and economy especially of developing countries. Healthcare expenditures on diabetes are expected to account for 11.6% of the total healthcare expenditure in the world in 2010. Estimated global healthcare expenditures to treat and prevent diabetes and its complications are expected to be a total of at least 376 billion U.S. Dollars (USD) in 2010. By 2030, this number is likely to exceed USD490 billion.² The onslaught of diabetes is increasing in pandemic proportions particularly in the developing countries like India. The recent reports from the World Health Organization rate India as the country with the largest number of diabetic subjects in the world and India being "The diabetic capital of the world". Among other types of Diabetes, Type –2 Diabetes is most common at a global level in developing countries being at the forefront of this epidemic³.

SOCIOECONOMIC STATUS

Resources and materials with in virtually all human societies are unequally distributed. The ability of an individual to access resources is strongly related to their position within the social hierarchy of that society. The socioeconomic position within the social hierarchy can be determined by three factors. These factors are class (related to the ownership and control of material resources), status (related to the ability to access cultural, social and knowledge resources) and power within the political context. Socioeconomic status (SES) is evaluated as a combination of factors including income, level of education and occupation. It is a way of looking at how individuals or families fit in to society using economic and social measures that have been shown to impact individual's health and wellbeing.⁴

URBANIZATION AND DIABETES

In India the substantial rise in diabetes is due to rapid epidemiological transition with increased urbanization and westernization. All over the world, traditional lifestyle and dietary patterns that have sustained over the generations are disappearing day by day. In India, dramatic changes in lifestyle, from traditional to modern, have taken place due to the advancement in technology. This led to physical inactivity, consumption of fat rich diets, sugar and calories and a high level of mental stress. All these factors could adversely influence the insulin sensitivity and lead to obesity and diabetes.^{3,5}

EDUCATION STATUS AND DIABETES

Education is often used as an indicator and it is an easy way to assess and measure the SES of the participants. Education is given in the early part of life and it reflects the SES in the later part of the life⁶. In general there are many barriers for achieving good glycaemic control. The most important barriers were found to be inadequate knowledge, understanding about diabetes, its symptoms and complication among diabetics⁷⁻⁸. The study of Rajput *et al.*, (2012) indicates the high prevalence rate of type –2 DM diabetes among those who had basic or no formal education which is due to their ignorance about the importance of healthy vegetables and fruits. Educated People may be expected to understand and interpret preventive measures, and thus more will be able to change their behaviour and benefit from the health care system¹⁰.

INCOME STATUS AND DIABETES

The Income of people also exhibits a strong association with the occurrence of Type –2 DM. It is revealed that less family income plays an important limiting factor in assessing the health of men and women. Income of the people indicates the social standing and the potential to access healthy food, education, health care and good living conditions. Income can therefore influence health, just as health can influence income and that is why there is a risk of reverse causality.¹¹

FOOD HABIT AND DIABETES

Dramatic changes in the prevalence or incidence of Type - 2 DM among communities where there have been major changes in the type of diet consumed from a traditional indigenous diet to a typical 'Western' diet¹². Changes in disease rates are almost certainly explained by changes in several dietary factors as well as by changes in other lifestyle related factors, notably a reduction in physical activities.¹³

EXERCISE AND DIABETES

Lifestyle measures which combine increased physical activity and dietary modifications are an important component in the management of both Type -1 and Type 2 DM. Regular physical exercise is associated with changes in body composition with a reduction in body fat and increase in muscle mass, a reduction in triglycerides, increase of high density lipoprotein fraction. It also exhibits a linear relationship with education and people who are educated have knowledge about the importance of physical activity and manage their normal body weight.¹⁴

LIFESTYLE FACTORS AND DIABETES

Smoking is a lifestyle risk factor for the prevalence of Type 2 diabetes. But there is no strong evidence that smoking contributes to such metabolic dysfunction as Type 2 DMs. The report given by De Cosmo *et al.*, 2006¹⁵ claims that as smoking is associated with a low glomerular filtration rate, it may influence the risk of type 2 diabetes development. A similar observation was reported by Kowallet *et al.* (2010)¹⁶. Similarly, alcohol consumption is also another independent lifestyle factor for the prevalence of Type 2 DM. The high alcohol

consumption is associated with higher prevalence of Type 2 diabetes mellitus¹⁷.

PHYSICAL ACTIVITY

Physical activity is one of the important modifiable risk factors for diabetes. Nearly 14% of the reason for diabetes is due to physical inactivity and it also acts as a major risk factor for obesity¹⁸. In the past few decades, a huge number of working people has shifted from manual labour associated with the agriculture work to less physically demanding office jobs. India is undergoing rapid urbanization and it is associated with increasing obesity and decreasing physical activity, changes in lifestyle, food habit, income status and change from physical work to less physical occupations¹⁹.

CONCLUSION

Most of the available evidence concerns the prevalence and incidence of diagnosed Type 2 diabetes based on Socioeconomics Position of the people; it is dependable in showing a clear gradient with people in lower socioeconomic status having higher prevalence rate and more incidence of diabetes than the people in high

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socioeconomic position. In addition, better understanding and measures of vulnerabilities in adulthood such as food habit, physical activity, lifestyle and psychosocial factors may also provide a complete explanation of what underlies differences by SEP. From the above study it was concluded that effective diabetes prevention and intervention strategies is need to take into account not only individual socioeconomic position, but also contextual socioeconomic factors in the study regions. In another side, by involving various departments of the government and nongovernmental agencies to address both preventive and curative aspects of diabetes management to the public.

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CONFLICTS OF INTEREST

Conflict of interest declared none.

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