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Socio- Economic Variability and Women's Health: a study among an Ethnic Group of Assam

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Abstract

Socioeconomic variability acknowledges that within any socioeconomic category, there can be a wide spectrum of circumstances, opportunities, and resources available to individuals or household. Socio-economic status (SES), whether measured by income, education, or occupation, correlates with a diverse array of health outcomes. But the relationship between SES and risk factor for obesity and cardiovascular disease in Indian tribal women remain unclear. A cross-sectional study was undertaken among Deori women, a scheduled tribe population of Assam, North East India, aimed at exploring the socioeconomic diversity and its influence on their health status. In the present study a total of 512 subjects were studied ages ranging from 18 to 49 years. In the present study, upon calculating SES, it was discovered that the majority of Deori women fell into the middle socioeconomic bracket followed by lower SES. The findings indicated that there is an increased risk of health problems associated with higher SES among the women of the Deori population.

Keywords: Deori, Women's Health, Socio- economic status, North East India.

Introduction

Recognizing socioeconomic variability entails understanding that even within a single socioeconomic bracket, there exists a diverse range of circumstances, opportunities, and resources accessible to individuals or households. This concept recognizes that socioeconomic status (SES) is not static or homogeneous; rather, it can vary significantly within and across different populations. Earlier studies reveal that socioeconomic variability highlights the complex and multifaceted nature of socioeconomic factors and their influence on various aspects of life, including health outcomes and overall well-being. Pamuk et al.

(1998) asserted that SES, whether measured by income, education, or occupation, correlates with a broad spectrum of health issues, encompassing low birth weight, cardiovascular disease, hypertension, arthritis, diabetes, and cancer. According to Link and Phelan (1995), socioeconomic disparities are the fundamental causes of health disparities. In developing societies, a direct association was noted, with individuals in higher socioeconomic strata, including women, men, and children, exhibiting a higher propensity for obesity (Sobal and Stunkard, 1989). Conversely, Mendez et al. (2003) observed that in middle-income developing countries, blood pressure and hypertension levels were elevated across both low and high-income groups. The goal of the current study is to investigate the effect of SES on the health of Deori women, an ethnic group of Assam, North East India.

Material and methods

The present study was conducted among Deori, an ethnic group of Assam age group ranging from 18 to 49 years. Deoris are mainly found in Lakhimpur, Dhemaji, Tinsukia, Dibrugarh, Sibsagar, Jorhat, Sunitpur, Kamrup district of Assam and Lohit and Tirap district of Arunachal Pradesh (Deori., 2005). They are popular plain scheduled tribe of Assam which belong to the Mongoloid group of people. The term 'Deori' finds its roots in the Assamese word 'Deva', which means God. The role of priest is supposed to be performed by the Deori people for Chutiya kingdom. They belong to Tibeto-Burman linguistic family and use to speak both Deori and Assamese language.

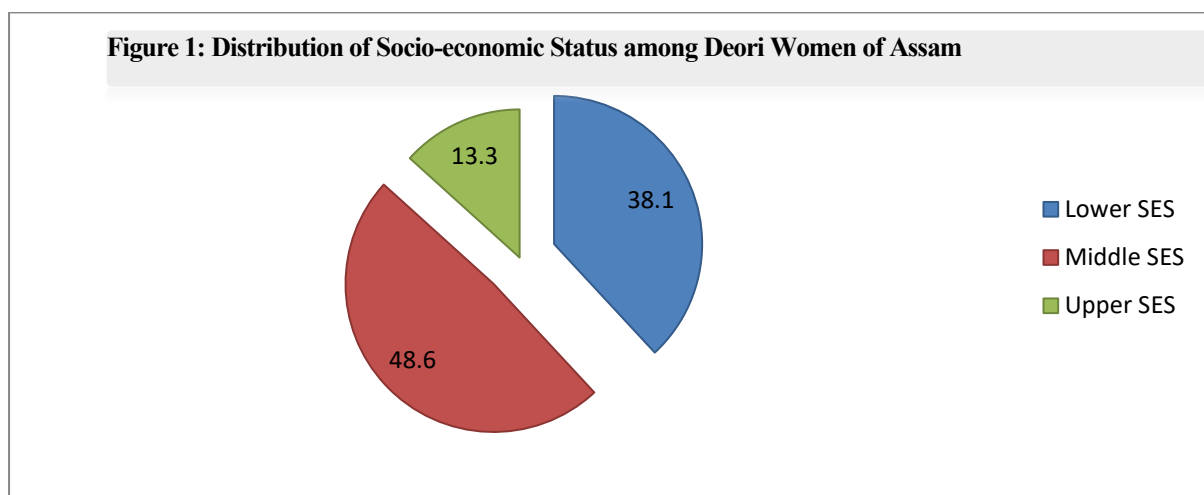
The Deori usually live in joint family system. They are lived in a common residence under a single head. There are three different groups among Deori people namely Dibongia, Tengapania and Borgoya. The groups are locally calls as 'Khels'. These 'Khels' are further subdivided into 24 sub groups. It is call as clans. Though there are 24 clans, only one clan resides in a particular village. Deori people built there house in their own style. Particularly they build their houses on the river bank, usually facing to the east direction. Houses are made up of bamboo, wood, cane with hatch roofs and constructed 4 to 5 feet from the ground called as '*Chang Ghor*'. Deori follows some strict social rules in case of marriage. A person cannot marry a girl belonging to his patrilineal group of clan.

In the current study, following preliminary reconnaissance, the districts of Lakhimpur, Sonitpur, and Dhemaji in Assam were selected for further investigation. Subsequently, comprehensive and extensive fieldwork was conducted in these areas. The sample under study comprises of 512 individuals and care was taken to include only apparently healthy women. Pregnant women, premenarcheal and postmenopausal women, physically and mentally challenged subjects were excluded from the study. Each subject was provided with a thorough explanation of the study's purpose and the techniques to be employed. Only those who volunteered and provided written consent were included in the study. In the present study both qualitative and quantitative approaches have been used for the collection of primary data that involved personal interview by using well structured schedules which containing both close and open ended questions. A cross-sectional survey was conducted door-to-door to gather anthropometric and physiological data, along with socio-demographic profiles.

In the present study, the modified Kuppuswamy scale, initially proposed in 1976 (Kumar et al., 2013), was utilized to assess the SES. This scale involves the summation of scores based on the education, occupation, and income of the head of the family per month. The resulting total is then categorized into three distinct socioeconomic classes, facilitating ease of analysis for the study. Anthropometric measurements were conducted following the techniques outlined by Weiner and Lourie (1981) and Singh and Bhasin (2004). Prior to each measurement, all instruments were meticulously checked for zero error. Additionally, the measurement procedures were rehearsed beforehand to minimize personal errors.

Results and Discussion

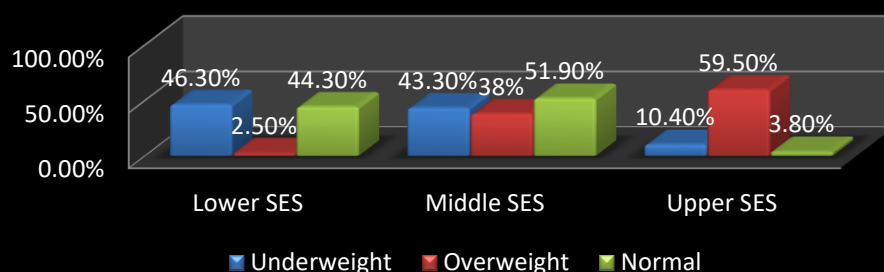
Figure 1 illustrates the distribution of SES among Deori women in Assam, determined by monthly income, occupation, and education level. The majority of Deori women were observed to fall into the middle SES category (48.6%), followed by lower (38.1%) and upper (13.3%) SES.



Health is not solely a biomedical construct; rather, it is shaped by the social, cultural, psychological, economic, and political factors of the people concerned. Wen et al. (2003) discovered that lower levels of education were linked to increased weight gain, obesity, or overweight, as well as elevated waist-to-hip ratio. Conversely, Rissanen et al. (1991) found that low education levels posed a risk for substantial weight gain, while Kaur et al. (2011) reported that central obesity was associated with higher education levels among both males and females. Previous studies have revealed a significant correlation between SES and various chronic diseases, underweight, obesity, and gestational weight gain etc. (Wolfe et al., 1997; Ohlm and Rossner, 1994). In Western societies, obesity is most prevalent among those with low SES. However, a study conducted in Delhi revealed a higher prevalence of overweight among adults belonging to high-income groups compared to middle-income groups (NFI, 1999). Figure 2 displays the distribution of body mass index (BMI) across different levels of SES among Deori women in Assam. It indicates that lower SES correlates with a higher prevalence of chronic energy deficiency, as measured by BMI. Conversely, the study found that the proportion of women classified as overweight increases with rising SES. In a similar study conducted by Kapoor et al. (2009), it was discovered that the prevalence of

chronic energy deficiency was higher among women from lower socioeconomic backgrounds. In the current study, 64.8% of women were identified as below the poverty line and held BPL cards. Deori women predominantly engaged in agricultural activities characterized by low productivity. Additionally, their economic activities were observed to be primitive in nature. The low literacy rate among women resulted in reducing income from economic pursuits. A small percentage of women obtained higher education degrees in the present study. Factors contributing to school dropout rates among Deori women include economic disadvantages, lack of infrastructure for higher education, household responsibilities, and a preference for early marriage, all of which are linked to health issues. A decrease in income can initiate a multiplier effect impacting savings, investment, production, and consumption behaviour, consequently influencing the health status of women.

Figure 2: Distribution of BMI Categories according to the Level of Socio-economic Status among Deori Women of Assam



In the present study, when examining regional obesity indicators such as waist circumference (WC), waist-to-hip ratio (WHR), and waist-to-height ratio (WHtR) across different levels of SES among Deori women in Assam (see Table 1), it was observed that the risk factors increased with higher SES among the population. Specifically, the risk category of WC was found to increase with rising SES within the population. The negative effects of urbanization and unhealthy lifestyles along with population aging are particularly challenging for low- and middle-income countries (Miranda et al., 2008; Fall, 2001). Quispe et al., (2016) reveals that the relationship between SES and risk factors for cardiovascular disease depends on the indicator used. High SES group, based on income level, had a higher prevalence of elevated WC than the low-income group. Furthermore, in the Deori community, when analyzing WHR, the study unveiled that the largest proportion of women classified as at risk was observed within the middle SES group which is contradictory to earlier study by Shahraki et al., (2008). Moreover, it was observed that the risk category of Waist-to-Height Ratio (WHtR) increased with higher socioeconomic status (SES) among Deori women. This implies that high SES serves as a risk factor for obesity and cardiovascular diseases later in life among this population.

Table 1: Distribution of Regional Obesity according to the Level of Socio-economic Status among Deori Women of Assam

Regional Obesity		Lower SES	Middle SES	Upper SES
		N (%)	N (%)	N (%)
WC	At Risk	3 (6.5)	18 (39.1)	25 (54.3)
	Normal	192 (41.2)	231 (49.6)	43 (9.2)
WHR	At Risk	44 (31.9)	62 (44.9)	32 (23.2)
	Normal	151 (40.4)	187 (50.0)	36 (9.6)
WHtR	At Risk	10 (14.1)	27 (38.0)	34 (47.9)
	Normal	185 (42.0)	222 (50.3)	34 (7.7)

In the present study, the highest number of pre-hypertensive systolic and diastolic blood pressure has observed in the middle SES group. Conversely, among this group, the highest number of women with high blood sugar levels was also found, as indicated in Table 2. Elevated blood pressure and sugar levels may be attributed to interactions with a high-fat diet and low levels of physical activity, which are exacerbated by an increasing sedentary lifestyle associated with economic development. Corsi and Subramanian (2012) found that in India increasing SES appear to be at greatest risk for type 2 diabetes. Earlier study by Grotto et al. (2013) found a contradictory result that higher prevalence of hypertension among individuals with low socioeconomic indicators.

Table 2: Distribution of Physiological Functions according to the Level of SES among Deori Women of Assam

Physiological Functions		Lower SES	Middle SES	Upper SES
		Deori N (%)	Deori N (%)	Deori N (%)
SBP	Pre- hypertensive	23 (27.4)	42 (50.0)	19 (22.6)
	Normal	172 (40.2)	207 (48.4)	49 (11.4)
DBP	Pre- hypertensive	30 (35.7)	36 (42.9)	18 (21.4)
	Normal	165 (38.6)	213 (49.8)	50 (11.7)

BSL	At Risk	3 (16.7)	10 (55.6)	5 (27.8)
	Normal	192 (38.9)	239 (48.4)	63 (12.8)

Conclusion

The SES of individuals is a crucial determinant of both their standard of living and health status, exerting influence on the incidence and prevalence of various health-related conditions. Addressing the socioeconomic disparities and improving access to resources such as nutritious food, healthcare services, and socio-economic opportunities is crucial for promoting health equity and reducing the burden of chronic energy deficiency and cardiovascular diseases among women and other vulnerable populations. Government and non-government organizations should take more proactive measures to raise awareness about the symptoms and causes leading to the deterioration of women's health. Furthermore, efforts should be made to bridge the gap between rural women and healthcare workers from both governmental and non-governmental sectors. More research is necessary in these areas to uncover the issues related to women's socio-economic development, facilitating the proper implementation of government and non-government programs.

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