

Objective

- The growing prevalence of obesity worldwide is a major threat, and it has become double burden in many developing and low-income countries.
- This project will further investigate the gaps on understand the role of westernization as a risk factor influencing chronic disease prevalence in the state of West Bengal. The theoretical basis of this research is driven by Arnett's theory of Westernization and by modern concepts of acculturation research

Significance

- To evaluate if sociodemographic (gender) and household characteristics (wealth status) have any impact on chronic disease outcomes with reference to BMI
- To evaluate the relationship between western style diet and how it predicts health behaviors with respect to BMI. This unique and recent nationalized data set from India (NFHS-4) used allows us to address these questions directly.

Methods

- This study will utilize secondary data from a nationalized survey (NFHS-4) in India, particularly from the state of West Bengal (due to the highest prevalence of obesity among adults in India). Sample includes 17668 individuals
- Dependent variable of interest is the body mass index (BMI) indicator of obesity; whereas the independent variable is the western style diet practiced in the state. A multiple linear regression was run to look the mean value of BMI by the level of diet.
- A factorial ANOVA was run to see if gender and wealth status have an impact on BMI.

Results

Model	Coefficients					95% CI for B	
	Unstandardized Coefficients	Standardized Coefficients	t	Sig.	Lower Bound	Upper Bound	
1. Constant (Fried Food)	1869.721						
			23.969	0.000	1716.819		
			2022.622				
Fish	51.522	0.014	1.641	0.101	-10.009	113.053	
Eggs	4.121	0.002	0.2150	0.830	-33.482	41.724	
Fruits	94.157	0.048	5.957	0.000	63.176	125.139	
Aerated Drinks	84.653	0.086	10.729	0.000	69.186	100.119	
Chicken or Meat	-39.450	-0.016	-1.884	0.060	-80.500	1.600	
Dark Green Vegetables	130.477	0.015	1.937	0.053	-1.532	262.485	
Pulses or Beans	2.356	0.001	0.77	0.959	-57.789	62.500	
Milk or Curd	-13.512	-0.011	-1.402	0.161	-32.399	5.376	

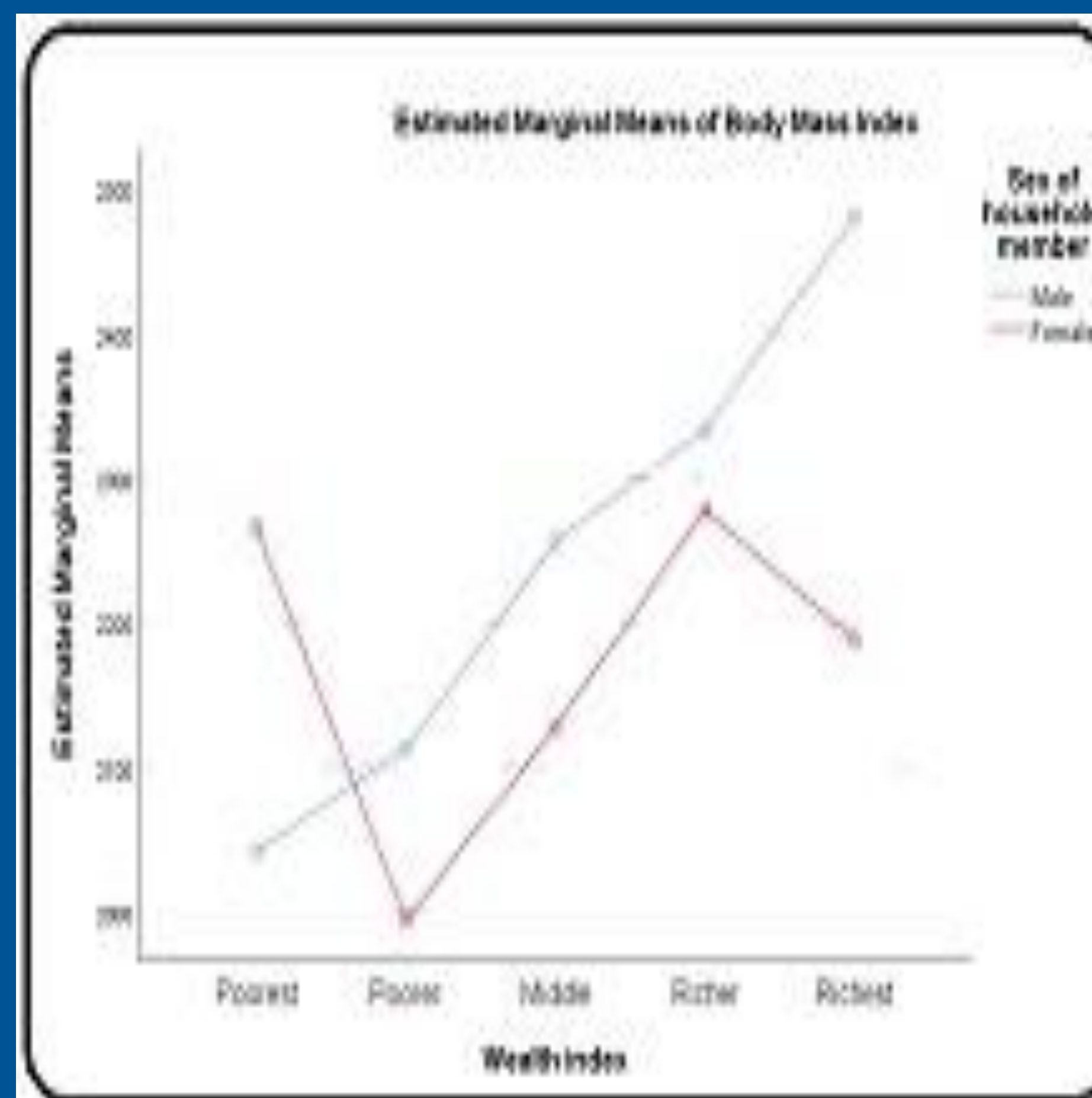
a. Dependent Variable : Body Mass Index

* Multiple Linear Regression was done after dummy coding variables; categorical variables of diet components have been transformed to dummy variables.

* So, as consumption of aerated drinks increase from occasionally to daily, BMI increase by 84.65 units. On the other hand, as consumption of fruits increase; BMI increased by 94.15 units.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	32429408.167 ^a	9	3603267.574	27.397	0.000
Intercept	2163260542.114	1	2163260542.114	16448.101	0.000
Gender	612065.103	1	612065.103	4.654	0.031
Wealth Index	5377258.437	4	1344314.609	10.221	0.000
Gender*Wealth Index	3297933.208	4	824483.302	6.269	0.000

a. R Squared = .118 (Adjusted R Squared = .114)



* Here, the interaction effect of Gender and Wealth Index was found to be significant ($p < 0.01$)

* Main effects of gender and wealth index were studied and found that wealth index had significant results ($p < 0.01$) meaning that they differ in scores of wealth index groups from poorest to richest. But there were no significant difference between poorer and poorest groups.

Conclusion

- Tukey Honestly Significant Difference (HSD) test showed that richest group differ from all groups of wealth index
- From the plot, it indicates that richer group has the highest mean for females and the richest group has the highest mean for the males. Largest difference between male and female lie in the richest group of wealth index with statistical significance.
- The long-term goal is to reduce the chronic disease rates particularly obesity and to reduce chronic disease disparities among the adults living in the state of West Bengal.

References

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- Vennu, V., Abdulrahman, TA., & Bindawas, SM. (2019). The prevalence of overweight, obesity, hypertension, and diabetes in India: Analysis of the 2015-2016 National Family Health Survey. *International Journal of Environmental Research and Public Health*, 16, 3987

Acknowledgement

This work is supported by the data received from the National Family Health Survey-4 in India and approved by the DHS Program.