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Research Paper

Distance Matters: The Interplay of Commuting, Body Mass Index, And Educational Performance in Rural Youth

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ABSTRACT

Distance can indirectly affect individuals BMI by influencing weight, caloric expenditure, metabolism and overall lifestyle including individual educational performance. This study aims to find out interplay relationship among long commutes, BMI and educational performance of rural students. Some College going youth belongs to rural areas of near Rajim Block, District Raipur, studied in Government college, Nayapara 150 male and female students consisted for the research. Information such as weight, height and age inculcate to assess BMI (health of the youth), simply by survey method distance and educational performance of the rural students was taken. Through SPSS an analytical tool statistical computation was done. In conclusion, the health and academic achievement of rural students is significantly affected by the distance that they have to travel to school. Addressing transportation challenges, providing support services, and considering flexible educational options can help mitigate these issues and ensure that rural students have the opportunity to succeed academically while maintaining good health.

Keywords: *Commuter, BMI (Body Mass Index), Rural Youth, Educational Performance*

In comparison to other state Bihar, Jharkhand and Uttar Pradesh Chhattisgarh had higher education Index of 0.526 report of 2011 NHDR. Students as they transitioned from home to university for educational purpose is tough decision for them. Long commutes can lead to sedentary behaviour and limited physical activity, which can contribute to weight-related issues and potentially higher BMI among students also poor health, including weight-related issues, can lead to fatigue, illness, and difficulty concentrating, reduce motivation, all of which can hinder academic achievement. It all may cause students presence in college and frequent absenteeism can disrupt the continuity of leaning and negatively affect academic achievement. Students who not live in the campus and come for educational purpose and their overall personality enhancement called commuters. Independent mobility linked with more socialization. Available literatures manifested that active transportation to Educational institute cause of better physical health, lower obesity rate, boost mental health and improve rate of academic achievement (Faulkner et al.,2009; Pojani and Boussauw, 2014, Zaragoza et al.,2020; Van Dijk et al.,2014; Stea and Torstveit, 2014). We all know that distance matters to physical, mental and educational domain of the students specially for the rural population who had to travel from their native places for their betterment and positive wellbeing.

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Distance, in and of itself, does not directly cause any changes in a person's BMI (Body Mass Index) and academic performance. Rural students have the opportunity to succeed academically while maintaining good health It's important to note that these relationships are multifaceted, and many other factors can come into play, including the student's individual circumstances. Moreover, not all students will be affected in the same way, and some may adapt well to long commutes, while others may struggle.

Efforts to address these challenges should consider a holistic approach, including improving transportation options, supporting student health and well-being, and providing academic support services to help students in rural areas succeed academically, regardless of their BMI and the distance they have to travel to school or college. study focused to find the association behind long distance, BMI and academic performance of the rural site students and their struggles. BMI play as a surrogate indicator of the amount of body fat it does not directly measure body fat. BMI is calculated using a mathematical formula that relates a person's weight (in kilograms or pounds) to their height (in meters or inches). The formula is: BMI = (Weight in kilograms) / (Height in meters) * 2. It falls into specific classification categories that are often used in medical and public health contexts to assess an individual's weight status. These categories include underweight, normal weight, overweight, and obesity.

Justification Of the Study

The impact of long commutes on BMI and academic achievement is influenced by a combination of factors, including the individual's health, socioeconomic status, and Institution's environment. There are number of research indicating the potential negative effects of long commutes, more comprehensive studies are needed to understand better to this relationship, taking into account various confounding factors.

Objective of the Study

- To find out the impact of commuting on BMI and Educational Performance.
- To find out gender difference of Commuting Rural Youth in the aspect of BMI and Educational performance.
- To Study Interplay relationship of Commuting, Body Mass Index, and Educational Performance in Rural Youth.

REVIEW OF LITERATURE

Finn & et al., (2018) explained in his self-reported survey research to find out the inverse relationship between body mass index and school achievement on 196 high school students. Data obtained by school records to find out the association of engagement with BMI and Achievement. Mediation analysis was conducted. Results reveal the simple relationship between BMI and achievement and demonstrate negative correlation between the factors. Findings conclude that obese students often experience lower academic achievement. Similarly, Atare & Nkandgude (2014) investigated the association of Body mass index and academic achievement of undergraduate students by the assessment using BMI calculator and cumulative grade point average (CGPA) scores. By the using of Multivariate analyses results denote the significant difference in between CGPA and BMI. Findings also deny old stigma of the judgement that physical health is determine the academic achievement of the students rather than there conducive learning environment.

Alhazmi, A., Aziz, F., & Hawash, M.M., (2021). Find an inverse relationship between academic performance and BMI. Having normal BMI category participants achieve higher GPA in class. Physical activity influences direct to academic performance of the students.

Hypotheses

- There would be no significant impact found of commuting on BMI and Educational Performance.
- There would be no Gender difference found of Commuting Rural Youth in the aspect of BMI and Educational performance.
- There would be no Significant relationship found of Commuting, Body Mass Index, and Educational Performance in Rural Youth.

METHOD

Sample

Random Sampling was implemented to select the Subject for the purpose of data collection. of 150 male and female students. College going youth from rural area near to Rajim Block, District Raipur, studied in Government college, Nayapara consist 150 male and female students for the research. Simply by ANOVA and Correlation method was used to analyse the data in the help of SPSS an analytical tool for the data computation and interpretation.

Research Design

This study is survey in nature because of the key variables of student's health and learning in the impact of distance.

Tools used for data collection

Information such as weight, height and age inculcate to assess BMI (health of the youth), simply by survey method the record of distance and educational performance by the past consecutive results of the rural students was collected.

Statistical techniques & Procedure

Data Analysed with the help of Statistical tool on SPSS version 16. To find out the Differential effect between male and female's communality, BMI and Academic performance. A correlational technique also performed to see the relationship among the BMI and Academic Performance of Commuters.

After taking consent from students and the instruction provided by author information such as demographic details Age, Gender, weight, Height, Distance from home to collage and for Academic Achievement Past consecutive result was noted.

RESULTS

Crosstabluation, Chi-square, Mean, Independent Sample Test & Correlation described in Table 1 and more in this section.

Table 01-A Crosstabulation of Gender, BMI and Result

Result	Gender	BMI				Total
		underweight	normal	overweight	obese	
second	M	13 (30.2%)	23 (53.5%)	6 (14.0%)	1 (2.3%)	43
	F	26 (47.3%)	18 (32.7%)	11 (20.0%)	0 (0%)	55
Total		39 (39.8%)	41 (41.8%)	17 (17.3%)	1 (1.0%)	98
first	M	2 (9.5%)	10 (47.6%)	6 (28.6%)	3 (14.3%)	21
	F	5 (45.5%)	5 (45.5%)	0 (0%)	1 (9.1%)	11
Total		7 (21.9%)	15 (46.9%)	6 (18.8%)	4 (12.5%)	32

Result	Gender	BMI				Total
		underweight	normal	overweight	obese	
merit	M	1 (6.2%)	10 (62.5%)	5 (25.0%)	0 (0%)	16
	F	0 (0%)	4 (100.0%)	0 (0%)	0 (0%)	4
Total		1 (5.0%)	14 (70.0%)	5 (25.0%)	0 (0%)	20
Total	M	16 (20.0%)	43 (53.8%)	17 (21.2%)	4 (5.0%)	80
	F	31 (44.3%)	27 (38.6%)	11 (15.7%)	1 (1.4%)	70
Total		47 (31.3%)	70 (46.7%)	28 (18.7%)	5 (3.3%)	150
* Pearson Chi-Square value = 10.91 (.012). Cramer's Value = .270, P < 0.05						

Table 1 shows the different values in section of Gender, BMI and Results mention in percent where it Classified BMI, Result of Male and female students. It shows that there are (47.3%) female students are underweight and achieving second position in class. There are (62.5%) Male student comes under normal weight stands in merit position in class these percent define the achievement and the health of the students on a gender basis. Chi-Square value for Result*Gender*BMI is (10.912) and its asymptomatic significance value is (.012). (which is less than 0.05). Cramer's V value = .270, P< 0.05

Table 01-B Crosstabulation of Gender, BMI and Distance

Distance	Gender	BMI				Total
		underweight	normal	overweight	obese	
near	M	4 (13.3%)	20 (66.7%)	4(13.3%)	2(6.7%)	30
	F	11 (52.4%)	8(38.1%)	2(9.5%)	0(0%)	21
Total		15(29.4%)	28(54.9%)	6(11.8%)	2(3.9%)	51
medium	M	10(24.4%)	21(51.2%)	9(22.0%)	1(2.4%)	41
	F	12(31.6%)	16(42.1%)	9(23.7%)	1(2.6%)	38
Total		22(27.8%)	37(46.8%)	18(22.8%)	2(2.5%)	79
long	M	2(22.2%)	2(22.2%)	4(44.4%)	1(11.1%)	9
	F	8(72.7%)	3(27.3%)	0(0%)	0(0%)	11
Total		10(50.0%)	5(25.0%)	4(20.0%)	1(5.0%)	20
Total	M	16(20.0%)	43(53.8%)	17(21.2%)	4(5.0%)	80
	F	31(44.3%)	27(38.6%)	11(15.7%)	1(1.4%)	70
Total		47(31.3%)	70(46.7%)	28(18.7%)	5(3.3%)	150
* Pearson Chi-Square value = 10.91 (.012). Cramer's Value = .270, P < 0.05						

Table 01-B Shows the cross tabulated data of Gender, BMI and Distance of the students where 51 students come from near distance, 79 are from medium distance and 20 students come from long distance. 66.7 percent male students have a normal weight who come from near distance, 52.4 percent female students come from near distance having underweight and 13.3 percent male students are underweight and overweight simultaneously. There are 8 students 72.7 percent female students whom underweight come from long distance. Chi-Square value for Result*Gender*BMI is (10.912) and its asymptomatic significance value is (.012). (which is less than 0.05). Cramer's V value = .270, P < 0.05

Table 02 Mean value of Gender with BMI, Results and Distance

Gender	BMI		Results		Distance	
	M	SD	M	SD	M	SD
F	19.37	4.619	52.61	12.367	20.23	9.955
M	22.01	4.382	60.14	15.383	20.53	8.316
Total	20.78	4.670	56.63	14.507	20.39	9.088

Table 02 Mean value of BMI of male students (22.01) & for females (19.37). Mean value of Result of male students (60.14) & for females (52.61). Mean value for Distance of male students (20.53) & females (20.23). Describe that Males have high BMI, High academic achievement and a minimum difference of distance in comparison to females.

Table 03 Independent samples Test Table

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
BMI	.013	.909	3.591	148	**.000**	2.641	.736	1.188	4.095
			3.578	143.003	.000	2.641	.738	1.182	4.100
Results	4.356	.039	3.270	148	**.001**	7.523	2.301	2.977	12.070
			3.317	146.989	.001	7.523	2.268	3.042	12.005

Table 03 shows that in the aspects of BMI 3.57, df=148, (P< .000) and Results 3.31, df=148, (P< .001) there was statistically significant difference found between the both two group of Male and Female Students. Therefore, reject the null hypothesis, and conclude that Commuting Rural Youth have a significant difference in the aspect of BMI and Educational performance.

Table 04 Correlation between Distance, BMI and Results

Correlations				
		Distance	BMI	Results
Distance	Pearson Correlation	1		
BMI	Pearson Correlation	-.057	1	
Results	Pearson Correlation	-.039	.205*	1
*Correlation is significant at the 0.05 level (2-tailed).				

Table 6 shows that there is Positive Correlation between BMI and Results (.205) at the significance level of 0.05 which is denoted that BMI of the students highly correlated with Result of the students. Result shows a significantly positive correlation that means physical health never hinder the achievement of the students. There is Negative Correlation found between distance with BMI (-.057) and Result (-.039)

DISCUSSION

All of the aforementioned leads to the finding that commuter students are significantly less inclined findings with their BMI and Results. Itinerant education history of majority of commuter students cause emanate interest of negative relation. Data were analysed using descriptive and inferential statistical techniques cross tab analysis revealed that out of a total 150 sample. 31.3% students observed in the category of underweight, 46.7% Normal, 18.7% overweight & 3.3% are obese. Whereas female students (70) reported poor achievement as compare to male students (80). Academic difficulties linked with low birth weight. (Seyoum et al., 2019; Alhazmi et al., 2021; Ayano et al., 2024). Underweight status affects their educational outcome. Mean value of BMI, Result, & Distance highlight the difference between male & female student's health & achievement It was being observed that male students have high BMI (22.01) & good academic achievement (60). High BMI significantly correlated with high academic achievement (.205). In studies high BMI denote high academic achievements. Distance had negative correlation with BMI & Results. Educational performance negatively impacted by increased BMI which significantly reduce classroom participation. (finn et al., 2018). It denotes that lower the distance rate will increase the health and the performance of the student. Specifically, female student needs more concerned on their health potential. This study highlights a reciprocal relationship where poor educational performance is leading the undernourished weight, particularly among girls. There are mixed effects on educational performance of active commuting to college.

CONCLUSION & SUGGESTION

This study was not experimental in nature or in the traditional sense. Rather it examines various traits associated with caloric expenditure correlates with educational performance and its implementation in their lifestyle. It's true that who live on hostels or near home to the college are more engaged overall compared with students who commute. There is high number of students who come from long distance and have a grievance of underweight. According to the GHI (Global Hunger Index) India has 97 rank out of 118 countries this hunger situation is classified as "serious". Students in rural areas daily protein intake access the public distribution system (PDS) in Chhattisgarh is greatly improved and doing a commendable job but the quantities provided form the PDS for per person out of whole family may be much lower than the required daily intake and family could not all time able to purchase the balance amount from the open market. Total protein or calorie an average quantity of 2330Kcal/day is insufficient to full fill the nourishment for the child as boy's ratio of undernourishment is high as compare to girls. (Atkumari & Sardana, 2017). Elevated BMI was Skew the test results. Students learning potential was minimized due to commuting. Differences between the commuters and non -commuters is essential to understand, as the population of commuters nationwide increases. (Newbold, Mehta & Forbus, 2011) The guided reflective observation and analysis of the study provide students to the opportunity to connect more fruitful accommodations regarding their health and ease learning outcomes.

Recommendations for future research/ suggestion

- There is need for systematic nutritional and psychosocial survey for Chhattisgarh rural college students by ICMR-NIN (National institute of nutrition) so that equivalent data is available.
- Its necessity for students to regulate an enact counselling setup, health clubs in the college hub to incite the students for regular exercise and healthy lifestyle which is also helpful to achieving their future endeavours.

REFERENCES

Alhazmi, A., Aziz, F., & Hawash, M. M. (2021). Association of BMI, Physical Activity with Academic Performance among Female Students of Health Colleges of King Khalid University, Saudi Arabia. *International Journal of Environmental Research and Public Health, 18(20*), 10912. https://doi.org/10.3390/IJERPH182010912

Atare, U. F., & Nkangude, A. T. (2014). Body mass index and academic performance of undergraduate university students. *Asian Journal of Management Sciences & Education, 3(1*), 105–112. http://www.ajmse.leena-luna.co.jp/AJMSEPDFs/Vol.3(1)/AJMSE2014(3.1-11).pdf

Atkuri, R., & Sardana, A. (2018). Malnutrition among High School Tribal Children in Selected Blocks of Chhattisgarh. *Journal of Indian Education*, *44*(3), 110-121.

Ding, P., Li, Y., Feng, S., & Pojani, D. (2023). Do long school commutes undermine teenagers' wellbeing? Evidence from a nation-wide survey in China. *Journal of Transport & Health*, *30*, 101605.

Faulkner, G. E., Buliung, R. N., Flora, P. K., & Fusco, C. (2009). Active school transport, physical activity levels and body weight of children and youth: a systematic review. *Preventive medicine*, *48*(1), 3-8.

Finn, K. E., Faith, M. S., & Seo, Y. S. (2018). School Engagement in Relation to Body Mass Index and School Achievement in a High-School Age Sample. *Journal of Obesity, 2018, 3729318*. https://doi.org/10.1155/2018/3729318

Friman, M., Gärling, T., Ettema, D., & Olsson, L. E. (2017). How does travel affect emotional well-being and life satisfaction? *Transportation research part A: policy and practice*, *106*, 170-180.

Hearst, M. O., Shanafelt, A., Wang, Q., Leduc, R., & Nanney, M. S. (2016). Barriers, benefits, and behaviors related to breakfast consumption among rural adolescents. *Journal of School Health*, *86*(3), 187-194.

Kuh, G. D., Gonyea, R. M., & Palmer, M. (2001). The disengaged commuter student: Fact or fiction?

Malone, D. (2011). Empirical evidence of the fairness and quality of peer evaluations. *Academy of Educational Leadership Journal*, *15*(2), 129-140.

Newbold, J. J., Mehta, S. S., & Forbus, P. (2011). Commuter students: Involvement and identification with an institution of higher education. *Academy of Educational Leadership Journal*, *15*(2).

Pojani, D., & Boussauw, K. (2014). Keep the children walking: active school travel in Tirana, Albania. *Journal of Transport Geography*, *38*, 55-65.

Previous Global Hunger Index (GHI) reports. https://www.globalhungerindex.org/ https://www.ifpri.org/previous-global-hunger-index-ghi-reports/

Stea, T. H., & Torstveit, M. K. (2014). Association of lifestyle habits and academic achievement in Norwegian adolescents: a cross-sectional study. *BMC public health*, *14*, 1-8.

Tigre, R., Sampaio, B., & Menezes, T. (2017). The impact of commuting time on youth's school performance. *Journal of Regional Science*, *57*(1), 28-47.

Van Dijk, M. L., De Groot, R. H., Van Acker, F., Savelberg, H. H., & Kirschner, P. A. (2014). Active commuting to school, cognitive performance, and academic achievement: an observational study in Dutch adolescents using accelerometers. *BMC public health*, *14*, 1-11.

Zaragoza, J., Corral, A., Ikeda, E., García-Bengoechea, E., & Aibar, A. (2020). Assessment of psychological, social cognitive and perceived environmental influences on children's active transport to school. *Journal of Transport & Health*, *16*, 100839.

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Conflict of Interest
Declare to no conflict of interests.

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