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A survey on nutritional status and academic performance among primary school children of Bishnupur district, Manipur

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Abstract:

An attempt has been made to determine the association between academic performance and nutritional status among the primary school students of Bishnupur district, Manipur. The study found that the students' prevalence of stunting, being underweight, and wasting were 14.6%, 11.9%, and 5.3%, respectively. Nutritional status:The overall prevalence of stunting was 14.6% (95% CI: 11.2% - 18.1%), and the majority of underweight and wasting were 11.9% (95% CI: 8.7% - 15.1%) and 5.3% (95% CI: 3.1% - 7.5%) respectively. The prevalence of wasting among females was significantly higher than among males.Nutritional status and academic performance: There was a significant mean difference in the average marks of children with undernutrition and those without. After adjusting the factors, there was a significant association between students' academic performance and the nutritional indicators (weight-for-age, height-for-age and weight-for-age) along with family income. Monthly income less than Rs. 10,000 (AOR = 0.12, 95% CI 0.09, 0.22), stunted (AOR = 0.26, 95% CI 0.12, 0.51), underweight (AOR = 0.57, 95% CI 0.23, 0.87), wasted (AOR = 0.76, 95% CI 0.49, 0.85).

Keywords: Academic performance, undernutrition, nutritional status,

Introduction

Early education plays a vital role in the development of a child. The education obtained during the primary level is an essential stage in cultivating the child's personality. Children attain the essential knowledge and skills during this stage for personal well-being.Nutrition is also a vital component of human health, life and brain development throughout the entire lifespan. Balanced nutrition is crucial for endurance, physical growth, cognitive development, and productivity. Malnutrition or undernutrition is considered a pressing problem that affects the ability of children to learn and causes them to perform at a lower level in school. Undernutrition is a significant public health problem among school children. It contributes to various diseases affecting the student's academic well-being. Insufficient evidence regarding nutritional status allied with academic performance among school-age children. The association between nutritional status and educational achievement among school-age children in developing countries has not been recognized or studied well.Pooreating habits are associated with undernutrition symptoms such as stunting and poor brain development. Learning the association between nutritional status and academic performance among school children focused at the primary level is necessary. This study aimed to determine nutritional status and correlation with academic performance among primary school students in Bishnupur district, Manipur.

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Methodology

The present study was conducted on 396 school students studying at the primary level from the Bishnupur district of Manipur, India. Data was collected by household schedule using a pre-tested structured questionnaire.The student's academic performance was based on the average marks obtained by the students in their consecutive mid-term and final exams. The average marks were categorized as either poor academic performance or good academic performance, with those scoring less than 60% marks as inferior and those who scored higher as good.The three widely recognized anthropometric indices (height-for-age, weight-for-height, and weight-for-age) have been used for nutritional status. Additionally, the z-scores for height-for-age, weight-for-age, and weight-for-height below two standard deviations were classified as stunted, underweight, and wasted, respectively.

Results

There was atotal of396 students in the study. Of this,219 (55.3%) were males, and 177 (44.7%)were females. The ages of the students ranged from 7 to 12 with a mean age of 9.5 years. The overall prevalence of stunting was 14.6% (95% CI: 11.2% - 18.1%) and the majority of underweight and wasting were 11.9% (95% CI: 8.7% - 15.1%) and 5.3% (95% CI: 3.1% - 7.5%) respectively.The prevalence of wasting among females was significantly higher than among males.There was a significant mean difference in the average mark of children with any undernutrition and those without.After adjusting the factors, there was a significant association between students' academic performance and nutritional indicators (weight-for-age, height-for-age, and weight-for-height) and family income.Monthly income less than Rs. 10,000 (AOR = 0.12, 95% CI 0.09, 0.22), stunted (AOR = 0.26, 95% CI 0.12, 0.51), underweight (AOR = 0.57, 95% CI 0.23, 0.87), wasted (AOR = 0.76, 95% CI 0.49, 0.85).

Table 1. Socio-demographic characteristics of primary students in Bishnupur, Manipur

Variable	Category	Frequency (N:396)	Percent (%)
Sex	Male	219	55.3
	Female	177	44.7
Age	Below 8	137	34.6
	8-10	211	53.3
	Above 10	48	12.1
Mother's educational status	No formal education	5	1.3
	Primary	42	10.6
	Secondary	212	53.5
	Degree and above	137	34.6
Father's educational status	No formal education	2	0.5
	Primary	56	14.1
	Secondary	114	28.8
	Degree and above	224	56.6
Family Size	Three or less	26	6.6
	4 to 5	236	59.6

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	Six or more	134	33.8
Monthly Income	less than 10000	72	18.2
	10000 to 20000	193	48.7
	more than 20000	131	33.1

Fig. 1 Prevalence of undernutrition among primary school students in Bishnupur, Manipur

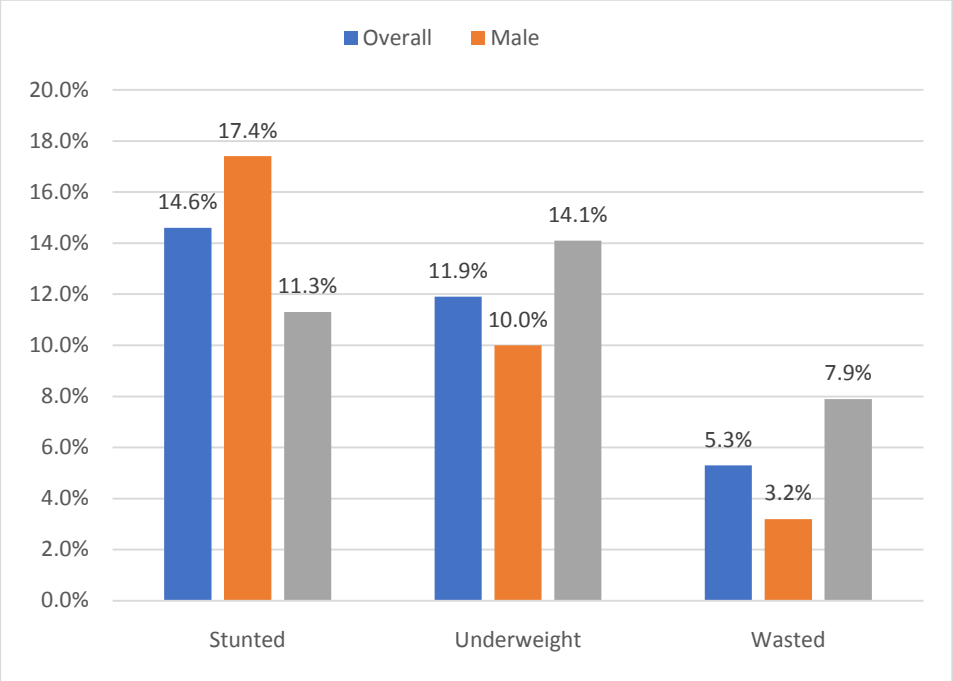

Table 2. Academic performance and association with relevant variables

Variables	Categories	Good	Poor	COR	AOR	p-value
Age	Below 8	35.2	32.7	0.82 (0.56-1.22)	0.84 (0.59-1.34)	0.172
	8-10	36.2	38.9	0.54 (0.34-1.43)	0.62 (0.24-1.37)	0.067
	Above 10	28.6	28.4	1	1	
Mother's educational status	No formal education	0.8	1.2	0.43 (0.09-1.48)	0.35 (0.12-1.61)	0.072
	Primary	14.7	18.2	0.56 (0.27-1.28)	0.62 (0.32-1.34)	0.116
	Secondary	57.2	54.2	0.72 (0.47-1.75)	0.82 (0.59-1.91)	0.184
	Degree and above	27.3	26.4	1	1	
Father's educational status	No formal education	0.3	0.5	0.37 (0.12-1.09)	0.39 (0.15-1.03)	0.071
	Primary	19.5	21.7	0.56 (0.34-1.28)	0.58 (0.32-1.19)	0.093
	Secondary	32.9	32.6	0.67 (0.48-1.36)	0.74 (0.57-1.72)	0.132
	Degree and above	47.3	45.2	1	1	
Family Size	Three or less	22.5	25.2	1	1	
	4 to 5	42.1	40.4	0.44 (0.21-1.53)	0.45 (0.23-1.63)	0.072
	Six or more	35.4	34.4	0.23 (0.09-1.12)	0.22 (0.10-1.11)	0.167
Monthly Income	less than 10000	5.7	12.3	0.15 (0.09-0.34)	0.12 (0.06-0.23)	0.002*
	10000 to 20000	45.0	42.3	0.57 (0.17-1.17)	0.31 (0.10-1.43)	0.092
	more than 20000	49.3	45.4	1	1	
Height-for-age	Stunted	17.2	46.3	0.21 (0.10-0.47)	0.26 (0.12-0.51)	0.001*
	Normal	82.8	53.7	1	1	
Weight-for-age	Underweight	22.6	43.7	0.53 (0.18-0.79)	0.57 (0.23-0.87)	0.012*
	Normal	77.4	56.3	1	1	

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Weight-for-age	Wasted	3.2	45.2	0.27 (0.10-0.52)	0.16 (0.09-0.25)	0.032*
	Normal	96.8	54.8	1	1	

Conclusion

The study has revealed that among the primary school students in Bishnupur, stunting, underweight, and wasting were prevalent. It also showed that the income of the house and the indicators of nutrition, *viz.* height-for-age, weight-for-age, and weight-for-height had a significant association with the student's academic performance.

Reference

1. AnuarZaini, M. Z., Lim, C. T., Low, W. Y., & Harun, F. (2005). Effects of nutritional status on academic performance of Malaysian primary school children. *Asia Pacific Journal of Public Health*, *17*(2), 81-87.
2. Degarege, D., Degarege, A., &Animut, A. (2015). Undernutrition and associated risk factors among school-age children in Addis Ababa, Ethiopia. *BMC public health*, *15*(1), 1-9.
3. Frongillo, E. A., Jyoti, D. F., & Jones, S. J. (2006). Food stamp program participation is associated with better academic learning among school children. *The Journal of nutrition*, *136*(4), 1077-1080.
4. Galal, O., &Hulett, J. (2003). The relationship between nutrition and children's educational performance: a focus on the United Arab Emirates. *Nutrition Bulletin*, *28*(1), 11-20.
5. Herrador, Z., Sordo, L., Gadisa, E., Moreno, J., Nieto, J., Benito, A., ... &Custodio, E. (2014). Cross-sectional study of malnutrition and associated factors among school-aged children in rural and urban settings of Fogera and LiboKemkem districts, Ethiopia. *PloS one*, *9*(9), e105880.
6. Jamison, D. T. (1986). Child malnutrition and school performance in China. *Journal of development economics*, *20*(2), 299-309.
7. Mendez, M. A., & Adair, L. S. (1999). Severity and timing of stunting in the first two years of life affect performance on cognitive tests in late childhood. *The Journal of nutrition*, *129*(8), 1555-1562.
8. Mesfin, F., Berhane, Y., &Worku, A. (2015). Prevalence and associated factors of stunting among primary school children in Eastern Ethiopia. *Nutrition and Dietary Supplements*, 61-68.
9. Opoola, F., Adebisi, S. S., &Ibegbu, A. O. (2016). The study of nutritional status and academic performance of primary school children in Zaria, Kaduna State, Nigeria. *Annals of Bioanthropology*, *4*(2), 96.
10. Sarma, M. S. G., Wijesinghe, D. G. N. G., &Sivananthawerl, T. (2013). The effects of nutritional status on educational performance of primary school children in the plantation sector in NuwaraEliya educational zone. *Trop Agric Res*, *24*(3), 203-14.
11. Shariff, Z. M., Bond, J. T., & Johnson, N. E. (2000). Nutrition and educational achievement of urban primary schoolchildren in Malaysia. *Asia Pacific Journal of Clinical Nutrition*, *9*(4), 264-273.
12. Singh, S. P., & Singh, S. S. (2017). A survey on nutritional status of adolescent children of Manipur (special reference to Imphal East District, Manipur). *International Journal of Agricultural and Statistical Sciences*, *13*(1), 131-133.