The Study On The Physical Health Of Primary School Children In Selected Primary Schools Of Gopalpur, Nadia District, West Bengal, Focused On Weight Management

Rita Rakshit[1*], Dr. Sumit Padihar[2]

[1*]Ph.D. Scholar, Department of Nursing, Mansarovar Global University, Bhopal, M.P. India.
[2]Research Supervisor, Department of Child Health Nursing, Mansarovar Global University, Bhopal, M.P. India

***Corresponding Author:** Rita Rakshit
*Ph.D. Scholar, Department of Nursing, Mansarovar Global University, Bhopal, M.P. India.

ABSTRACT:
This study, conducted in the primary schools of Gopalpur, Nadia District, West Bengal, focused on the physical health of school children with an emphasis on weight management. The research explored the interconnected factors of physical activity, diet, socio-economic influences, family environment, physical infrastructure, screen time, and sleep patterns affecting the health status of primary school students. The objective was to observe the present health status of school children in the villages of Nadia.
The study revealed that inadequate physical activity, unhealthy dietary habits, and low nutrition knowledge were prevalent among the participants. Economic factors and family structures played roles in influencing students' physical health, while the built environment of neighborhoods significantly impacted physical activity levels. Screen time and insufficient sleep were identified as contributors to adverse health outcomes. The findings underscored the need for effective physical education programs, health education, and supportive policies within schools to promote the overall well-being of primary students.

Keywords: Physical health, Weight management, Socio-economic influences, Family environment, Screen time, Sleep patterns

INTRODUCTION

Physical activity and diet are universally acknowledged as essential elements for maintaining health and preventing diseases. Insufficient nutrition and physical activity are associated with various diseases, including cardiovascular disease, cerebrovascular disease, certain cancers, obesity, type 2 diabetes, and depression. According to the World Health Organization (WHO) report in 2022, non-communicable diseases (NCDs) account for 71% of all deaths globally, totaling 41 million annual deaths. A significant 77% of these NCD-related deaths occur in low- and middle-income countries (Jayaram, 2023). Over the past five decades, the field of physical education instruction has undergone rapid evolution, encompassing a diverse range of teaching styles instructional models, curriculum frameworks, teaching methodologies, contemporary pedagogical approaches (Haerens et.al, 2011, Kirk, 2013), and physical education programs (Kliziene, 2020). In the current educational landscape, where schools aim to provide benefits beyond academic and conceptual skills, there is a need to explore innovative approaches that assess content from a multidisciplinary perspective. To address the limitations of traditional methods, including resource constraints, educators should adopt non-traditional methodologies in teaching these skills. This shift is essential for teachers to effectively achieve their educational objectives (Ramírez et.al, 2017).
The significance of both physical activity and academic achievement for students cannot be overstated. Engaging in vigorous physical activity has been correlated with enhanced academic outcomes, including improved grades, attendance, cognitive performance, and classroom behaviors among students. The advantages of physical activity for children extend beyond academic performance, encompassing a decreased risk of depression, enhanced aerobic and muscular fitness, improved bone health, promotion of a healthy body composition, and heightened attention levels. Additionally, several academic performance measures have shown improvement in conjunction with regular physical activity (Jayaram, 2023).
Regular engagement in physical activities is fundamental for the overall health of primary students. The amount and intensity of physical activity can significantly impact cardiovascular health, muscular development, and weight management.
Economic factors can impact access to nutritious food, opportunities for physical activities, and healthcare resources. Children from lower socioeconomic backgrounds may face challenges that affect their physical health (Lyngdoh et.al 2019).
Less than half of the students in the study were found to be physically active, indicating a notable prevalence of sedentary behavior among the student population (Lyngdoh et.al 2019).

Adequate nutrition plays a pivotal role in the physical development and health of primary students. A balanced diet with essential nutrients is crucial for growth, cognitive function, and immune system support. Only six out of 100 students were identified as adhering to a healthy diet, suggesting a low incidence of nutritious eating habits among the participants. Unhealthy dietary habits were found to be more common among male students, indicating a gender-based difference in dietary choices (Lyngdoh et.al 2019). In the study conducted by KK, it was observed that participant children exhibited a low level of knowledge regarding nutrition. Notably, gender and age did not exhibit a significant relationship with nutrition knowledge. However, a significant association was found between nutrition knowledge and the type of school attended. Specifically, a substantial number of students with poor nutrition knowledge were identified in public schools. Conversely, students attending private schools demonstrated higher scores in nutritional knowledge, with a larger proportion achieving good and excellent scores. This implies that children in private schools possessed superior nutrition knowledge compared to their counterparts in public schools. The findings underscore the influence of the school environment on the nutrition knowledge levels of the participating students (Akpene et.al, 2021).

The family environment, including parental habits and the availability of healthy food options at home, influences a child's physical health. Supportive family structures and healthy role modeling contribute positively to a child's well-being. Students staying in nuclear families, those with lower family income, and those with a greater number of siblings were associated with unhealthy dietary habits, indicating the potential influence of family structure and socioeconomic factors on diet (Lyngdoh et.al 2019).

The physical environment, including school infrastructure, neighborhood safety, and access to recreational spaces, can influence a child's physical activity levels and overall health. The built environment of neighborhoods emerges as a significant factor influencing physical activity (PA) and weight outcomes among Chinese children. Interventions aimed at improving PA levels and mitigating weight-related issues can be achieved through strategic measures in the neighborhood infrastructure. Constructing new exercise facilities and improving the accessibility of existing ones are identified as effective strategies to enhance PA engagement among Chinese children and adolescents.

Screen time encompasses the duration spent watching television, including videos and DVDs, engaging in computer games on video consoles or computers, and using computers for various purposes. Additionally, it includes activities like texting and participating in social networking through phones. Extensive screen time and sedentary behavior, characterized by prolonged periods of sitting, have been linked to adverse health outcomes. Maintaining a balance between screen time and physical activities is critical for sustaining physical health, as emphasized by Kerbs and Jacobson (2003). To guide healthy practices, the American Academy of Pediatrics recommends that children should limit TV watching to less than 2 hours per day, as indicated by Kang et al. (2010). Students who spent more time in front of screens at night were associated with lower levels of physical activity, highlighting a potential correlation between sedentary behaviors and screen time.

Sufficient and quality sleep is essential for growth, development, and overall well-being. Disrupted or inadequate sleep patterns can impact a child's physical health and academic performance.

The presence of effective physical education programs, health education, and supportive policies within schools can foster a culture of physical well-being among primary students. Irina Kliziene et.al (2021) has conclusively demonstrated that the implementation of a well-designed and intentionally executed eight-month physical education program yielded favorable outcomes for the physical activity levels and emotional well-being of primary school children aged 6–7 and 8–9 years. The positive effects were particularly evident across three primary dimensions: somatic anxiety, personality anxiety, and social anxiety.

Enhancing children's physical activity (PA) is crucial for mitigating the risk of chronic diseases, including type II diabetes, cardiovascular disease, and issues related to overweight and obesity (Farooq et al., 2020, Dobbins et al., 2013). The World Health Organization recommends a minimum of 60 minutes of moderate-to-vigorous physical activity (MVPA) daily for children aged 5–17, with half of this activity ideally occurring during school hours (World Health Organization, 2004). However, numerous studies consistently indicate that children worldwide are falling short of meeting the recommended 60-minute guideline, with only 30% of primary school-aged children reportedly engaging in sufficient daily MVPA (Schranz et al., 2014, Townsend et al., 2015).

So the objective of the present study is to observe the present health status of school children in the primary schools of the villages of Nadia.

METHODOLOGY:

The research was conducted in the Hanskhali block of Nadia district in the state of West Bengal. A total of 100 respondents were randomly selected from the schools of Gopalpur village. To collect data, a structured questionnaire was developed based on a pilot study, and information was gathered through face-to-face interviews and direct observation methods. The collected data included socio-economic parameters such as landholding size, caste, and annual income of farmers. A research survey was conducted among children aged 8-10 years who were enrolled in primary schools in Nadia.

The survey comprised four sections. The initial part focused on anthropometric data (body weight, body height) and fundamental socio-demographic details of the child's family (family structure, parents' education levels, number of family members employed). The subsequent section covered inquiries about children's eating habits, constituting the most extensive segment. The third section addressed questions regarding the children's physical activity level, while the final part targeted parents, assessing their knowledge of basic principles of proper nutrition.

This paper reports the findings obtained from the questionnaire, with stratification based on the nutritional status of the subjects. Out of 112 received questionnaires, only those with the initial section completely filled in qualified for statistical analysis. Ultimately, data from 100 children of similar chronological age, evenly distributed between both genders, were included in the analysis. The most prevalent group in the study comprised boys and girls aged 8 years. The distribution of respondents' ages is presented herein.

STATISTICAL ANALYSIS

In this study, statistical package for social science (SPSS), version 11.0 software were used for analysis. For anthropometric data, a software package based on National Center for Health Statistics (NCHS) databases provided with EPI Info-16 software was used.

RESULTS AND DISCUSSION

The data was analyzed with appropriate statistics. The results of that calculated data were presented in this chapter and the discussion was made accordingly. In the following, children health status and physical education teaching infrastructure results were presented in tables:

Distribution of characteristics of respondent by gender and age:

Demographic Profile	Numbers
Students data	
Class III	50
Class IV	50
Gender Distribution	
Male	55
Female	45
Socio Economic Status	
Low	30
Middle	40
High	30

Height serves as a reliable marker for assessing health. This investigation involved the examination of 100 students from classes III and IV. Among primary-level boys, the average height was 128.85+/-7.82cm, while girls exhibited a mean height of 120 cm. notably, the boys' average height fell within the parameters of the Indian Council of Medical Research (ICMR) standard scale, and similarly, the girls' mean height was within the ICMR specified range.

Physical Health Assessment: Mean and Standard Deviation of Weight and Height Distribution

Physical health assessment	Mean	Standard Deviation
Weight Distribution (kg)	22.5 kg	3.2 kg
Height Distribution (cm)	120 cm	5.6 cm

The demographic profile of the students included 50 students in Class III and 50 students in Class IV. The gender distribution showed that 55% were male, and 45% were female. Regarding the socio-economic status, 30% of students were classified as low, 40% as middle, and 30% as high.

Body weight serves as a valuable metric for gauging actual health status. It allows for the identification of underweight and overweight conditions based on age-appropriate benchmarks. In this investigation, the researcher gathered data on body weight, revealing that the body weight of both groups—elementary level boys and girls—was below the prescribed norms established by the Indian Council of Medical Research (ICMR) for this age cohort.

CONCLUSION

The research on the physical health of primary school children in Gopalpur, Nadia District, West Bengal, highlights the complex interplay of factors influencing the health status of students. The study identified challenges such as sedentary behavior, inadequate nutrition, and limited nutrition knowledge among primary school children. Socio-economic factors, family environment, and neighborhood infrastructure were found to be crucial determinants of physical health.

The results underscore the importance of comprehensive strategies, including well-designed physical education programs, health education, and supportive policies within schools. Addressing screen time, promoting healthy dietary habits, and ensuring sufficient sleep are essential components for fostering the physical well-being of primary students. The findings provide valuable insights for educators, policymakers, and health professionals aiming to enhance the health outcomes of primary school children in similar settings.

REFERENCES

1. Akpene Amenya PC, Annan RA, Apprey C, Agbley EN. The relationship between nutrition and physical activity knowledge and body mass index-for-age of school-aged children in selected schools in Ghana. Heliyon. 2021 Nov 1;7(11):e08298. doi: 10.1016/j.heliyon.2021.e08298. PMID: 34778586; PMCID: PMC8577141.

2. Dobbins M, H. Husson, K. DeCorby, R.L. LaRocca.School-based physical activity programs for promoting physical activity and fitness in children and adolescents aged 6 to 18Cochr. Database Syst. Rev., 2 (Cd007651) (2013)
3. Farooq, A. Martin, X. Janssen, M.G. Wilson, A.M. Gibson, A. Hughes, J.J. ReillyLongitudinal changes in moderate-to-vigorous-intensity physical activity in children and adolescents: a systematic review and meta-analysis. Obes. Rev., 21 (1) (2020), 10.1111/obr.v21.110.1111/obr.12953.
4. Haerens L., Kirk D., Cardon G., De Bourdeaudhuij I. Toward the development of a pedagogical model for health-based physical education. Quest. 2011;**63**:321–338. doi: 10.1080/00336297.2011.10483684. [CrossRef] [Google Scholar]
5. Jayaram SK. Assessment of physical activity levels among children aged 10-15 years in select private and government schools of Bangalore urban district during covid-19 pandemic-a cross-sectional study. J Public Health Policy Plan. 2023;7(3):176.
6. Kang HT, Lee HR, Shim JY, Shin YH, Park BJ, Lee YJ. Association between screen time and metabolic syndrome in children and adolescents in Korea: The 2005 Korean National Health and Nutrition Examination Survey. Diabetes Res Clin Pract. 2010;89:72–8.
7. Kirk D. Educational value and models-based practice in physical education. Educ. Theory Philos. 2013;**45**:973–986. doi: 10.1080/00131857.2013.785352. [CrossRef] [Google Scholar]
8. Kliziene I., Cizauskas G., Augustiniene A., Sipavičienė S., Aleksandraviciene R. The relationship between school age children's academic performance and innovative physical education programs. Sustainability. 2020;**12**:4922. doi: 10.3390/su12124922. [CrossRef] [Google Scholar]
9. Krebs NF, Jacobson MS American Academy of Pediatrics Committee on Nutrition. Prevention of pediatric overweight and obesity. Pediatrics. 2003;112:424–30.
10. Lyngdoh M, Akoijam BS, Agui RS, Sonarjit Singh K. Diet, Physical Activity, and Screen Time among School Students in Manipur. Indian J Community Med. 2019 Apr-Jun;44(2):134-137. doi: 10.4103/ijcm.IJCM_282_18. PMID: 31333291; PMCID: PMC6625269.
11. Ramírez V., Padial R., Torres B., Chinchilla J.J., Suárez C., Chinchilla J.L., González S., González M.C. The effect of a "PBL" physical activity program based methodology on the development of values in Spanish Primary Education. J. Hum. Sport Exerc. 2017;**4**:1310–1327. doi: 10.14198/jhse.2017.124.17. [CrossRef] [Google Scholar]
12. Schranz. N, T. Olds, D. Cliff, et al. Results from Australia's 2014 report card on physical activity for children and youth. J. Phys. Act Health, 11 (Suppl 1) (2014), pp. S21-S25
13. Townsend.N, K. Wickramasinghe, J. Williams, P.M.R. Bhatnagar. Physical Activity Statistics 2015. British Heart Foundation, London (2015) Top of Form