Health status and related behavior of children in a private and a public school of a village in Kathmandu district

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ABSTRACT

Children spend around 25% of their time of 260 days in a year in school. Hence early detection of abnormalities in health enables timely corrective measures to be taken. A descriptive study related to health of primary class students was carried out from June to September 2013 in a village which lies inside Kathmandu valley. Health status and related behavior was assessed in 69 students from a public school and 125 students from a private school who belonged to class 1 to 5. The results did not show significant difference between the variables in private and public school.

Keywords: health related behavior, public and private school, Kathmandu

INTRODUCTION

School Health service is an economical and powerful means of raising community health.[1]School Health program cultivates healthy habits among children and thereby makes the future generation of the state healthy. In Nepal the National School Health and Nutrition Strategy was approved by the Ministry of Health and Population in 2006. Attainment of education by adopting healthy lifestyle and health through education, both being interrelated, is the main basis of the strategy.[2]With the aim of assessing the health status and related behavior of children in a public and private school of Kapan village which lies in Kathmandu, we conducted a study on 194 children.

MATERIALS AND METHODS

A private school and a public school were randomly selected in Kapan village where there are 13 schools run by the government and 26 schools run by private sector. A cross sectional study was carried out on 194 students from class 1 to 5 who were present at the time of study. Prior to this survey consent was taken from the management committee of the schools and participants informed about the process. One hundred and twenty five students were from private school and 69 from government school. The total number of student belonging to class 1 to 5 was 230 and 140 in the private school and government school respectively. So the participants constituted approximately 50 percent of the total students. Standard questionnaire was used and medical examination was carried out from June to September 2013.The subjects were categorized according to different ethnic groups according to Central Bureau of Statistics 2011 and Hacchethu K.[4] Height and weight of each student was measured using stadiometer and weighing machine respectively. These measurements were categorized taking the reference of a pediatric chart (Indian Pediatrics- Agrawal DK, Agrawal KN, Upadhyay SK et al) and the category "normal range" was applied to those measurements which was within two standard deviation from the mean value.[5] Visual acuity was assessed using Snellen chart and any student with vision less than 6/6 of either eye with or without glasses were put under "poor visual acuity". Those with any health problems were referred to NMCTH in the concerned OPD. Data entry and analysis was done using SPSS 16.

RESULTS

Minimum age was 5 years and maximum age was 14 years of the participants (Mean - 9.3, s.d.- 1.7 years). Fifty six percent were male and 50% belonged to Brahmin/Chettri, 45% to janajati and 5% to Dalit caste. The findings related to morbidities and health related behavior is as follows:

Table 1 shows only 23 percent of students from public school brushed teeth twice daily and 15% did not brush even once a day. Even in private school only 58% of the students brushed their teeth twice daily.

Table-1: Brushing habit of students

	Public school (N =69)	Private school (N= 125)	Total (N= 194)
Less than once daily	10 (15%)	3 (3%)	13 (7%)
Once daily	43 (62%)	49 (39%)	92 (47%)
Twice daily	16 (23%)	73 (58%)	89 (46%)

Table 2 shows 50 % of students from public school and 79% of students from private school prefer processed foods as lunch. Thirty percent of students from public school and 39% from private school spend their free time in recreation without physical activity.

Table-2: Dietary preference and nature of recreation of students

	Public school (N=69)	Private school (N=125)	Total (N= 194)
Preference of processed foods as lunch	50 (72%)	79 (63%)	129 (66%)
Recreation without physical activity	21(30%)	49(39%)	70 (36%)

Table- 3 shows 12% of the students were underweight in public school and only 5% in private school. However the prevalence of stunting was 13% in public school and 14% in private school. In private school 21% of subject's height was above normal range for their age group but in public school there were none in this category.

Table-3: Anthropometric Measurements of Students

	Public school (N =69)	Private school (N= 125)	Total (N= 194)
Underweight	8 (12%)	6 (5%)	14 (7%)
Stunting	9 (13%)	17 (14%)	26 (13%)
Height above normal range	0 (0%)	27 (21%)	27 (14%)

Table – 4 shows 10% of subjects from public school and 12% from private school had poor visual acuity. Sixteen percent of the students from public school had problem of dental caries where as it was 11% in private school.

Table-4: Morbidity Status of Students

	Public school (N =70)	Private school (N= 125)	Total (N= 195)
Poor visual acuity	7(10%)	15(12%)	22(11%)
Dental caries	11(16%)	14(11%)	25(13%)

DISCUSSION

This study had children aged 5-14 and this age group constitutes 27% of the total population of Nepal.[6] Hence health related problems of this age group has a major impact in health status of nation. Only 5 percent of students were from Dalit caste (underprivileged community of Nepal) in our study and this caste represents around 13% of the total population of Nepal (International Labor Organization. Dalits and Labor in Nepal. 2005) . The ratio of female to male enrollment in primary class was almost 79% (86:109) which is low compared to the ratio of 92.5% given by latest World Bank report.(World Bank Report 2012).

The finding that 15% of participants from public school and 3% from private school brush less than once a day and only 46 % of total participants brush twice daily makes it necessary that the importance of brushing teeth twice daily needs to be taught from primary class. Even though both the schools are located near to the capital city basic oral hygiene measures are lacking. However a study done in British 14 year children has also shown that only 60 % brushed teeth twice a day.[7]Another study done in Dutch schoolchildren has shown brushing teeth at school itself increased the frequency.[8]

Sixty six percent of the students preferred processed food products as lunch rather than cooked meal like rice, pulse and vegetables. The habits children develop early in life may encourage them to adopt unhealthy dietary practices which persist into adulthood, increasing the likelihood of overweight, obesity and associated health problems such as diabetes and cardiovascular diseases. A study done in Ohio district also showed that fast foods were popular choice amongst the students.[9] A study done in Taiwanese students has shown that intake of low quality foods like noodles and cookies is associated with poor school performance.[10] A study has linked the role of trans- fatty acids present in manufactured food products in development of Alzheimer's disease and emphasized that the habit of regular intake of manufactured food be discouraged from childhood.[11]

Thirty six percent of students preferred recreation without physical activity. Low levels of physical activity and a sedentary lifestyle among children have been implicated in the development of cardiovascular disease later in life.[12]

The prevalence of stunting in both the schools of Kapan village is lower compared to a study on government primary school children of Azad Nagar, Banglore where it was 40%. The prevalence was more in low socioeconomic status children with poor sense of personal hygiene.[13] Prevalence of poor visual acuity shown by this study is also lower than that shown by a study done in school children of Nigeria where it was 20 %.[14] Lower prevalence in schools of Kapan could be due to its close location to the capital city where the socio economic status of parents is relatively better or less proportion of underprivileged community,

Dalits, in these schools. Another study done in students of Colombia has linked visual disorders with poor academic performance where the prevalence was 60.5% amongst failed students.[15] Hence early diagnosis of this condition followed by corrective measures might lead to improvement in academic performance. Though the prevalence of dental caries was higher in public school both the schools had lower prevalence compared to a study done on 5 and 12 year old school children in Chandigarh where it was 48 and 30% respectively. However in this study more than one third of the subjects had BMI lower than the normal range.[16] A systematic review has shown that dental caries is associated with both low and high body mass index.[17]

Both private and public schools play important role in Nepal in shaping the overall health of children. The concept of school health program should not only be limited to medical examination of children but include comprehensive care of well being of children throughout the school years. The number of research related to school health problems in Nepal is very less. Hence more extensive research involving larger number of schools should be conducted and problems of school children identified in its earliest stage followed by appropriate corrective measures. This might prove to be a small step in building a healthy nation.

Acknowledgements – We would like to express our sincere gratitude to Dr. S. B. Rizyal (Principal of NMCTH) and Professor Dr. S K Mehrotra, (HOD of Department of Community Medicine, NMCTH) for giving us the permission to carry out the survey and Dr. P Kafle (Assistant Professor of Department of Community Medicine, NMCTH), Ashish Basnet and students of 14th batch MBBS NMCTH for their help in carrying out the survey.

REFERENCE

1. Park K. School health Service. Park's Textbook of Preventive and Social Medicine.22nd edition. M/s Banaridas Bhanot Publishers 2013;534-7
2. DoHS. Ministry of Health and Population, Government of Nepal, Annual Report. Child health: Nutrition: 2005/2006: 34
3. Poudel JP, Tandon H, Tandan B *et al*. Village Development Committee and Demographic Profile of Nepal 2013. Mega Publication & Research Centre Kathmandu,Nepal,2013: 429
4. Hachhethu K. Democracy and Nationalism interface between state and ethnicity in Nepal. *CNAS* Journal 2003; 30(2): 217- 52
5. Ghai O P. Ghai Essential Pediatrics. Growth and development .5th edition. Naraina-II,New Delhi :Mehta Publishers 2003; 5
6. Population Division. Ministry of health and Population. Government of Nepal. Nepal Population Report 2011: 16
7. Al-Dlaigan H, Shaw L, Smith A J. Dental erosion in a group of British 14 year old children. *Br Dent J* 2002; 192: 526-30
8. Wind M, Kremers S, Thijs C, Brug J. Toothbrushing at school: Effects on toothbrushing behavior, cognitions and habit strength. *Health Education* 2005; 105: 53-61
9. Caine – Bish N. Food preference of school age children and adolescents in Ohio School District. *The Journal of Child Nutrition & Management* 2007; 2
10. Fu M, Cheng L, Tu S, Pan W. Association between unhealthful eating patterns and overall school performance in children. *J Am Diet Assoc* 2007; 107:1935-43
11. Morris MC, Evans DA, Bienias JL *et al* .Dietary fats and the risk of incident Alzheimer disease. *Arch Neurol* 2003; 60(2):194-200
12. Andersen LB, Harro M, Sardinha LB, Froberg K, Ekelund U, Brage S et al. Physical activity and clustered cardiovascular risk in children: a cross-sectional study (The European Youth Heart Study). *Lancet* 2006; 368(9532):299-304.
13. *Hasan I, Zulkifle, Ansari AH. Prevalence of stunting among school children of government urdu higher primary schools in Azad Nagar and its surrounding area, Banglore. International Journal of Medicine and Medical Science 2011; 3(10): 304-10*
14. *Isara AR, Uhumwangho OM.* Visual acuity status of primary school children in Oredo Local Government Area of Edo State, Nigeria. *Annals of Biomedical Science* 2010; 9(1)
15. *Guerrero RV, Martinez CC, Woolleyl L.* refractive errors and academic efficiency in primary school. *Colombia Med* 1989; 20(1): 8-10
16. Sohi RK, Gambhir RS,Veeresha KL, Randhawa AK, Sigh G. Assessment of prevalence of dental caries among 5 and 12 year old schoolchildren in Chandigarh(U.T.), India. *Archives of Oral Research* 2012; 8(1): 39-45
17. Hooley M, Skouteris H, Boganin C, Satur J, Kilpatrick N. Body mass index in children and adolescents: a systematic review of literature published 2004 to 2011. *BioMed Central* 2012;1:57