Impact of Nutritional Status on School Attendance of Children: Evidences from Primary and Middle Schools in Jammu & Kashmir

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ABSTRACT

The attendance of children in the school is an important factor for determining school outcome on the one hand and on the other hand the status of attendance depends upon their nutritional status. Malnutrition continues to be the principal cause of ill-health and pre-mature mortality and morbidity among children. The main purpose of this paper was to assess the impact of nutritional status on school attendance among 6-14 years old school going children of district Doda of Jammu and Kashmir, India. Nutritional status of 360 school going children was assessed in terms of anthropometric measurements. Height for age (HAZ), body mass index for age (BMIAZ) and weight for age (WAZ) of the sample subjects were calculated and compared with WHO-2007 reference standard. Data was analyzed using statistical software epi info 7 and ANTHRO Plus. Results indicated that out of the total children screened (N=360) 21.11 percent were stunted, 9.44 percent wasted and 11.39 percent underweight. Results further revealed that the school attendance is influenced by the nutritional status of the children i.e there is a positive relationship between the nutritional status and the level of school attendance. There is a great need to focus the attention of the policy-makers for intervening in such areas, as nutritional status of children is the main indicator of school outcome and a pre-condition for the society to progress.

Keywords: nutritional status, stunting, wasting, underweight, school attendance,

INTRODUCTION

Very few studies explored the relationship between poor nutrition and school attendance as most of the studies concentrated on knowing the relationship between poor nutrition and academic performance. However, absenteeism is not only due to undernourishment, but it also believed that in developing countries, the reason for not sending children to school involves certain costs also. These costs include tuition fees, school supplies such as textbooks and other stationary, clothing such as school uniforms and shoes, transport costs to get to

school etc. Poor households may also have to bear additional opportunity costs of sending children to school in the lost value of child labour, whether for activities within the household such as caring for younger siblings, working on household farms/business or outside the household on paid work activities (Neha Batura, 2013). Evidence suggests that better off households bear lower schooling costs and are more able to purchase goods and make resource allocation that will promote children's productivity in school and in turn, in the labour market (Leibowitz, 1977).

According to a study conducted in Indonesia by Deolalikar, A (1993), to know the role of gender differences in schooling returns and school enrollment rates. The study found that the gender of the child can determine school attendance. Parents prefer to send male children to school as they feel that the returns to their education are higher than that of female children. Studies have been carried out in an attempt to identify the main determinants of children's school attendance. Some have analyzed a variety of supply-side factors, while others have examined the interaction between school-based and socio-economic factors. In rural areas, particular the supply side factors (number of schools, teachers, distribution of textbooks and patriarchal culture) play an important role in determining the children's school attendance (Huisman, Rani & Smiths, 2010).

A study by Hancock et al. (2013) entitled ``Student attendance and educational outcomes: Every day counts'' revealed that attendance of students in the school is lower who have lower socioeconomic status, aboriginal students, students who are highly mobile and whose parents had lower levels of education and occupational status. The study further found that the effects of absence in the school adversely affect the academic performance, reading, and writing not only in the current year but in future years as well. The study established that every day of attendance in school contributes towards a child's learning and the academic outcomes are enhanced by maximizing attendance in the school. The students with a caregiver that was not employed had the worst attendance outcomes.

Another study by Enamiroro (2010) found a fairly positive relationship between attendance of the students and their academic performance in secondary schools in Delta State. It shows that 22.00 percent academic performance was influenced by attendance and the influence in rural areas is more than that in urban areas. Usha Jayachandran (2002), in a study in India, examined factors related to school attendance and found that school attendance is positively related to female workforce participation, parents' education and school accessibility and negatively related to poverty and rise with household size. The study further found that gender bias in school attendance declines with school accessibility and parental education, and rise with household size.

A study carried out in India by Manimagala (2012), found that the attendance of children in school is significantly associated with the distribution of textbooks, uniforms, and scholarship in the schools. In addition, the level of education of the parents and per capita income are also important factors to improve the attendance of the children in the schools.

Thus, there are various factors influencing attendance in the school and nutritional status is one among them. In the present study, an attempt has been made to know the association between nutritional status of the children and status of school attendance.

OBJECTIVES OF THE STUDY

The present study was carried out in district Doda of Jammu & Kashmir with the following objectives:

1. To know the prevalence of undernutrition among 6-14 years old school going children.
2. To investigate the impact of nutritional status on school attendance of the children in primary and middle schools of district Doda of Jammu & Kashmir.

MATERIAL AND METHODS

The purpose of the present study was to assess the nutritional status among school going children in primary and middle schools in district Doda of Jammu and Kashmir:

Area under Study

The study was carried out in district Doda of Jammu & Kashmir, India. District Doda lies in the outer Himalayan range in Jammu & Kashmir State. It is located about 175 kilometers from Jammu and about 200 kilometer from Srinagar.

Sample size

360 school-going children between the age group of 6-14 years constituted the study subjects for the present study.

Questionnaire

The information regarding anthropometric characteristics of the children and status of school attendance were attained through a well designed questionnaire by visiting in schools and homes of the children.

Anthropometric Measurement

 In the present study an *Indirect Approach (Anthropometric Approach)* was used to assess the nutritional status of the children. Anthropometry now-a-days has become a practical tool for determining the nutritional status of children (Hakeem, 2004) and the well being of the children is indicated in a best way by the nutritional status globally (Onis M de et. al 2000). For measuring the height and weight of the children a stature meter (height measuring) tape and digital weighing machine were used. The z-scores system was used to classify stunting (*low height for age*), wasting (*low BMI for age)* and underweight (*low weight foe age*) following the internationally accepted cut-off points with reference to WHO 2007 standard. A child who is below minus two standard deviation (-2SD) from the median of a reference population in terms of height-for-age, BMI for age and weight for age was considered as stunted, wasted and underweight respectively.

School Attendance

The information related to school attendance was attained from school record. The status of school attendance was divided into four sub-categories i.e., *Regular*, *Indicated*, *Moderate* and *Severe*. The range of sub-categories of attendance of children to determine the performance in terms of attendance in the school is adopted from Hancock et al. (2013). On the basis of the scale of percentages of attendance, the followings were the cut-off point used in the present study:

Table 1.1 Sub-categories and Cut-off Points for School Attendance

Sr. No	Cut-off Points	Sub-categories
1	≥ 90 percent	Regular
2	80 - 89 percent	Indicated
3	60 - 79 percent	Moderate
4	≤ 60 percent	Severe

Source: Hancock et al. (2013)

Statistical Analysis

Data was analyzed using statistical software epi info 7(available at www.cdc.gov). Z-scores system was used to measure the nutritional status of the children by using software -WHO ANTHRO Plus (version v1.0.4) by comparing with WHO reference 2007. Chi-square test was used to know the significance of the results.

RESULTS AND DISCUSSION

A total of 360 school-going children (Male - 93, Female - 89) were examined in district Doda of Jammu & Kashmir to know their nutritional status and its impacts on school attendance.
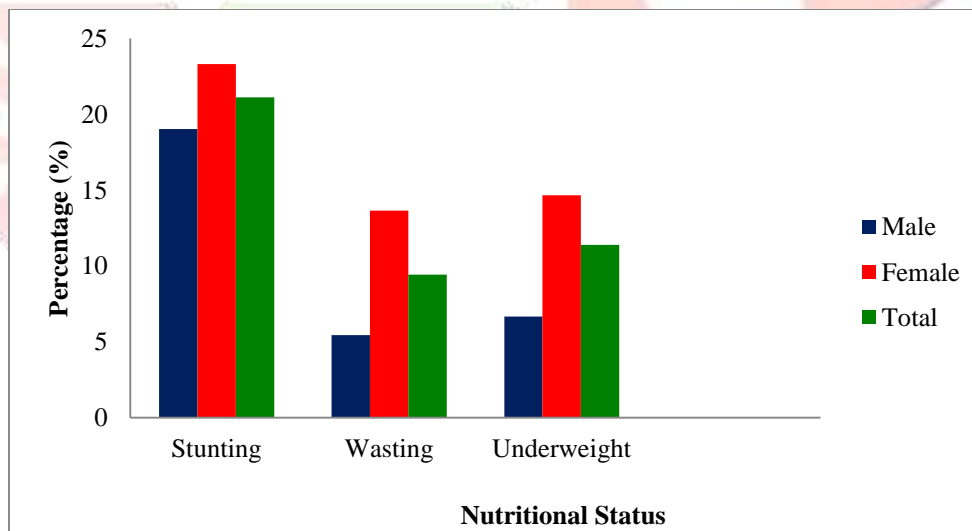
Nutritional Status

Table 1 shows sex-wise prevalence of different levels of nutritional status with reference to WHO 2007 growth reference. It was found that for all ages (6 - 14 years) and sexes, the prevalence of stunting (low height for age), wasting (low BMI for age) and underweight (low weight for age) were 21.11 percent, 9.44 percent and 11.39 percent respectively. The analysis further show that female children were at higher risk of anthropometric failure in terms of all the three indicators (stunting, wasting and underweight) as compared to male children (figure 1.1).

Table 1.2 Prevalence of Undernutrition among children aged 6 – 14 years

Nutritional Status	**N = 360**	*Prevalence of Undernutrition*		
		Male	*Female*	*Total*
Stunting (Height for Age)	360	35 (19.02)	41 (23.30)	76 (21.11)
Wasting (BMI for Age)	360	10 (5.44)	24 (13.64)	34 (9.44)
Underweight (Weight for Age)	281	10 (6.67)	22 (14.66)	32 (11.39)

Source: Field survey data, 2016, Values in parentheses are in percentages

Figure 1.1 Nutritional Status of the School-Going Children (6-14 years)

Source: Field survey data, 2016

Nutritional Status and School Attendance

Research has proven that there is a high correlation between school attendance and academic performance and success, while absence from school is often the greatest single cause of poor performance and achievement. For example, Heather, Valerie, Julia & Susan (2003) in a study revealed that good attendance in the school is

important because it is linked to children's attainment and future prospects. It further established that poor attendance has adverse effects not only in the current session but also affects badly in later stage of education. The study linked it with the existence of poverty and hunger at household level.

Results indicated in the present study established that stunted children were at higher risk of low attendance in the school as compared to children who were normal. Data in Table 1.3 show that only 7.89 percent of male and 19.74 percent of the female stunted children attended the school regularly (at no educational risk) as compared to 32.75 percent of male and 30.28 percent of female children who were not stunted had attended the school regularly. The study further found that as compared to normal children stunted children were at *severe educational risk* in terms of attending the school. The results were found statistically significant ($\chi^2 = 42.5009$, $df = 9$, $P < 0.01$).

Table 2 Nutritional Status and Performance in School Attendance

Nutritional Status	N=360	Performance in School Attendance								χ^2	
		Regular		Indicated		Moderate		Severe			
		M	F	M	F	M	F	M	F		
Height for Age	360										
Normal	284	93 (32.75)	86 (30.28)	48 (16.90)	39 (13.73)	7 (2.46)	9 (3.17)	1 (0.35)	1 (0.35)	$\chi^2 = 42.500$	$P < 0.01$
Stunted	76	6 (7.89)	15 (19.74)	19 (25.00)	21 (27.63)	9 (11.84)	4 (5.26)	1 (1.32)	1 (1.32)		
BMI for Age	360										
Normal	326	96 (29.45)	90 (27.61)	62 (19.02)	53 (16.26)	14 (4.29)	8 (2.45)	2 (0.61)	1 (0.31)	$\chi^2 = 28.537$	$P < 0.01$
Wasted	34	3 (8.82)	11 (32.35)	5 (14.71)	7 (20.59)	2 (5.88)	5 (14.71)	0 (0.00)	1 (2.94)		
Weight for Age	281										
Normal	249	80 (32.13)	66 (26.51)	46 (18.47)	34 (13.65)	12 (4.82)	8 (3.21)	2 (0.80)	1 (0.40)	$\chi^2 = 16.704$	$P < 0.10$
Underweight	32	5 (15.63)	11 (34.38)	3 (9.38)	9 (28.13)	2 (6.25)	1 (3.13)	0 (0.00)	1 (3.13)		

Source: Field survey data, 2016, Values in parentheses are in percentages, M = Male, F = Female

Table 1.3 shows that about 57.06 percent (29.45 percent of male and 27.61 percent of female) of normal children were found at no educational risk, 35.28 percent in the indicated, 6.75 percent in the moderate and only

0.92 percent in severe educational risk categories as compared to wasted children whose corresponding percentages were 41.17 percent, 35.29 percent, 20.59 percent and 2.94 percent respectively. The analysis showed that there were differences in attendance rates between normal and wasted children in the study area. It was found that the wasted children were at higher risk of low performance in terms of attendance in the school which was found statistically significant ($\chi^2 = 28.537, df = 7, P < 0.01$).

Like stunting and wasting, the present study also revealed that the underweight children were likely to have a lower attendance in the school when compared with children who were normal. Results indicated that the degree of attendance (regular, indicated, moderate and severe) attained by the normal children were reported as higher when compared to underweight children Table 6.4. The results were found significant statistically ($\chi^2 = 16.704, df = 7, P < 0.0$). Among underweight children, the girls were at higher risk of indicated, moderate and severe categories of educational risk categories.

In sum up, it can be concluded that the status of school attendance is influenced by the nutritional status of the children on the one hand and on the other hand absence from school is the greatest cause of poor academic performance and achievements.

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