Nutritional status and participation in extra curricular activities of Lambani school children

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■**ABSTRACT :** The study was conducted in Hoovinahadagali taluka, Bellary district during 2012-13 on 135 Lambani school children of 9-11 years of age selected from 5 government primary schools. The results revealed that there was highly significant difference in mean height and weight of children with respect to their NCHS standard norms in both group's age and gender. It was also highlighted that among 135 children, 48.2 per cent Lambani school children belonged to normal category followed by 40.74 per cent stunted, 8.2 per cent wasted and stunted and 2.96 per cent wasted category of nutritional status. Children with lower middle socio-economic status (61.33%) indicated medium level of participation followed by 16 per cent low level of participation and 14.66 per cent high level of participation in extracurricular activities. Whereas, children from poor middle socio - economic status group, 4 per cent children indicated medium level, 2.66 per cent high level only 1.33 per cent low level of participation in extracurricular activities. On the whole, most of children indicated medium level of participation (65.4%) and equal proportion of children indicated low as well as high level of participation in extracurricular activities. There was positive and significant difference found between nutritional status with level of participation in extracurricular activities, socio-economic status. Hence, a good nutritional status improves the level of participation.

■**KEY WORDS:** Nutritional status, Extracurricular activities, NCHS standards, Anthropometric measurements

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The present scenario of health and nutritional status of the school-age children in India is very unsatisfactory. Poor growth is associated with impaired development which is apparent in the relationship between growth status, school performance and intellectual achievement. Malnutrition also increases a child's risk of contracting respiratory infections, diarrhoea, measles and other diseases that often kill children or permanently harm their physical, psycho-social and cognitive development (Srivastava *et al.*, 2012).

A new study reported by Satyan in national news paper "Times of India" (dated 6 June 2013) revealed that malnutrition was main cause of deaths in all tribal children below six years old in 40 villages of Attapadi, Tamil Nadu. The children only weighed half of what has been prescribed by WHO standard. Health workers reported that 5,969 children below six years old in 187 villages had one or the other degree of malnourishment. The Lambani is one of the largest scheduled tribes, which is called by the different names in different parts of the country. They are known as Banjara, Banjari, Lambada and Lambani.The word Banjara is said to be derived from the Sanskrit word "*Vana Chara*", meaning wanderers of the jungle. Generally they live in exclusive settlements called '*tandas*', maintaining their cultural affinities and ethnic identity. Today, however they are experiencing many changes in their traditional culture due to exposure of younger generation and school children to urban areas and in turn undergoing considerable transformation. An increasing number of school children in tribal and total population bring demographic transitions that are affecting developing countries such as India (Rathod, 2007).

An improvement in nutritional status and physical

fitness of children increases their participation in extracurricular activities during school age period. Extracurricular activities are not the components of academic curriculum but an integral part of educational environment. Extracurricular activities comprise of sports, singing, music, debate, dance, drama, social services, etc. Ancient scriptures such as Veda, Upanishads, Mahabharata and Ramayana also discussed about cooking, singing, playing, warfare activities, wrestling archery, milking the cow as co -curricular activities. Now-a-days, schools and colleges have been given much more importance to extracurricular activities so that the hidden potential of students could be harnessed. An extracurricular activity helps to develop creativity and artistic talents among students. To develop the various facets of personality of children and students; school curricula must be supplemented with extracurricular activities. Extracurricular activities help in the development of intellectual, emotional and moral development. This position is strengthened by the fact that other researchers such as Huang and Carlton (2003) have found and continued to find, such a relationship. Bartko and Eccles *et al.* (2002) confirmed this result with their study of high school teenagers. One explanation of this finding comes from researchers who have developed identification or commitment models which state that students are more likely to do well when they engage in school-sponsored ECAs because they foster commitment to the schools goals and identification with the schools culture. The school children are easily accessible, capacitive and responsive group hence, the present study conducted with an objective, to assess the relationship between nutritional status and participation in extracurricular activities.

■ **RESEARCH METHODS**

The children belonging to 9-11 years of age and studying in group of 4th and 5th standard all available were selected for the study from standas schools representing four geographical locations of Hoovinahadagali taluka of Bellary district. Nutritional status was assessed to all available 135 students by anthropometric measurements *viz.*, height in cm and weight in kg. The height and weight of children were compared to NCHS standard with their respective age. Then children were categorized according to Waterlow's classification (1972) into normal, wasted, stunted and wasted and stunted category and socio- economic status of the Lambani school children was assessed by using socio-economic status scale developed by Agarwal *et al.* (2005) for all available students. And then, 75 students randomly selected based on their nutritional status for assessment of participation of the children in extracurricular activities were assessed by self structured questionnaires. The collected data were analyzed for calculating the percentages, correlation and association between the variables.

■ **RESEARCH FINDINGS AND DISCUSSION**

Optimum growth and development of school age children lay a sound foundation in the areas of health, nutrition, language development, personality building, socio-emotional adjustment and personality development. In this stage, the emphasis is given on academic achievement and personality development. The learning process of children is conditioned by multiple factors such as environment of child, his family and educational system.

It was highlighted that 48.20 per cent Lambani school children belonged to normal category followed by stunted (40.74%), wasted and stunted (8.14%) and wasted (2.96%) category (Table 1). It indicated the long term malnutrition among tribal children than short and chronic and long type

Table 1: Nutritional status of school children by age			(n=135)
Nutritional status	Age (year)		Total
	9 -10 (n=37)	10 -11 (n=98)	
Normal	30 (22.22)	35 (25.92)	65 (48.20)
Wasted (short duration malnutrition)	2 (1.48)	2 (1.48)	4 (2.96)
Stunted (long duration malnutrition)	5 (3.70)	50 (37.03)	55 (40.74)
Wasted and stunted (chronic and long duration malnutrition)	-	11 (8.14)	11 (8.14)

Figures in parenthesis indicate percentages

Table 2: Relationship between nutritional status and socio-economic status of children									(n=135)
Socio-economic status	Nutritional status							r value	Modified χ² value
	Normal (n=65)		Wasted (n=4)		Stunted (n=55)		Wasted and stunted (n=11)		
Upper high	-		-		-		-		
High	-		-		-		-		
Upper middle	-		-		-		-		0.313**	3.46**
Lower middle	54	(40)	4	(2.96)	54	(40)	9	(6.66)	
Poor middle	11	(8.14)	-		1	(0.74)	2	(1.48)	
Very poor	-		-		-		-		

** indificance of value at at P=0.01, Figures in parenthesis indicate percentages

of malnutrition. Among the 9 year age group, 22.22 per cent fell in normal category followed by stunted (3.70%), wasted (1.48 %) and none of them fell in wasted and stunted category. In 10 year age group, 37.03 per cent of children fell in stunted category followed by normal category (25.92 %), wasted and stunted (8.14%) and only 1.48 per cent in wasted category. This results supported by Edris (2007) revealed that overall prevalence of malnutrition in the community was high with 28.5 per cent of the children being underweight, 24 per cent stunted and 17.7 per cent wasted. Among the socio-economic variables included in the study, only family income was significantly associated with malnutrition.

The macro level association between poverty and child malnutrition is well documented with the risk factors for poor nutritional status largely coinciding with the correlates of poverty. Malnutrition is a result of more complex social and behavioural determinants that affect child feeding and rearing. Socio-economic and environmental conditions, together with feeding practices, are important determinants of malnutrition in developing countries. It is depicted in Table 2 that 40 per cent normal and stunted children belonged to lower middle socio- economic group while 2.96 per cent to wasted category and 6.66 per cent from wasted and stunted category belonged lower middle status. Whereas in poor middle socio-economic status, 8.14 per cent Lambani children belonged to normal status while 0.74 per cent from stunted and 1.48 per cent from wasted and stunted category. While none of wasted category. There was positive and highly significant correlation and association found between nutritional status and socio-economic status at one per cent level. Adeladza (2009) revealed that pervasiveness of child malnutrition in Kwale district with chronic malnutrition more pronounced in the area. Demographic and socio-economic parameters such as occupation and educational level of mothers; gender and occupation of household heads; and household size were strongly associated with child nutritional status in the study area. Similarly, Mondal *et al.* (2005) conducted study to determine the income and nutritional status among tribal households in rural West Bengal (during 2001). The study population comprised of 232 households. The results showed that owner cultivators were relatively better off in terms of

their income and nutritional status as compared to those of tenant cultivators as well as landless laborers. Further, income and nutritional status of landless laborers was relatively better than that of the tenant cultivators.

Out of 135 school children, 75 were selected for assessment of participation extracurricular activities presented in Table 3. On the whole most of children indicated medium level of participation (65.4%), equal (17.3%) of children indicated low level as well as high level of participation in extracurricular activities, 24.0 and 41.33 per cent indicated medium level of participation in 9 year and 10 year age group, respectively. Whereas, 13.33 per cent showed low level of participation while only 1.33 per cent low level of participation in younger age group. Among older year age group, 16 per cent indicated low level of participation whereas, only 4 per cent indicated high level of participation in extracurricular activities. There was positive and significant association found between extracurricular activities and age of children. This result is supported by Jovanoviæ *et al.* (2010) who revealed that the prevalence of insufficient physical activity among pre-school children in Pancevo was high, particularly among children with excessive body weight and obese children. Socio-demographic and behavioural factors as well as behaviour of parents significantly contributed to physical inactivity.

Table 3 : Age-wise participation of children in extracurricular activities (n=75)				
Level of participation in extracurricular activities	Age (years)		Total	Modified χ^2 value
	9 (n=29)	10 (n=46)		
Low	1 (1.33)	12 (16.0)	13 (17.3)	
Medium	18 (24.0)	31 (41.33)	49 (65.4)	13.35**
High	10 (13.33)	3 (4.0)	13 (17.3)	

** indicate significance of value at P=0.01
Figures in parenthesis indicate percentages

The relationship is found even when variables such as socio-economic status and cognitive ability are included as controls. Extracurricular activity participation is also positively associated with psychological constructs including interpersonal competence and self- esteem. Children with lower middle socio-economic status, 61.33 per cent

Table 4: Relationship between participation in extracurricular activities and socio-economic status (n=75)							
Socio-economic status	Participation in extracurricular activities						r value	Modified χ^2 value
	Low (n=13)		Medium (n=49)		High (n=13)		
Upper high	-		-		-		
High	-		-		-		
Upper middle	-		-		-		
Lower middle	12	(16.0)	46	(61.33)	11	(14.66)	0.083	1.20*
Poor middle	1	(1.33)	3	(4.0)	2	(2.66)	
Very poor	-		-		-		

* indicate significance of value at P=0.05, Figures in parenthesis indicate percentages

indicated medium level of participation followed by 16 per cent low level of participation and 14.66 per cent high level of participation in extracurricular activities. Whereas children from poor middle socio-economic status group, 4 per cent children indicated medium level, 2.66 per cent high level only 1.33 per cent low level of participation in extracurricular activities. There was positive and significant association but no correlation was found between level of participation in extracurricular activities and socio-economic status (Table 4). These results are supported by Torre *et al.* (2006) who conducted study on extra-curricular physical activity and socio-economic status in Italian adolescents in which total participants were 1121 males (46.5%) and 1290 females (53.5%), aged between 11 and 17 years (median age: 12 years).The results revealed the relationship between adolescents' physical activity and their families' SES. In particular, a positive relationship between participation in extra-curricular physical activity and their families with high SES was found. A similar study observed that Seabra *et al.* (2007) conducted a study on association between sport participation, demographic and socio-cultural factors in Portuguese children. The sport participation of 3352 children assessed by psychometrically established questionnaire. The results indicated that age was not related to sport participation attitudes of the children. The children from high and medium socio-economic status involved in sport participation than low SES status.

Among children with normal nutritional status category, 22.66 per cent indicated medium level of participation followed by 16 per cent high level and only 1.33 per cent low level of participation. While 5.33 per cent children with wasted nutritional status indicated medium level of participation (Table 5). Among stunted children, 32 per cent showed medium level of participation followed by low level (6.66 %) and only 1.33 per cent high level of participation in extracurricular activities. 9.33 per cent children from wasted and stunted category indicated low level of participation and remaining 5.33 per cent medium level of participation in extracurricular activities. These results are supported by Marko *et al.* (2013) that physical activity was associated with a higher grade-point average, and obesity was associated with a lower grade-point average in adolescence and physical activity and obesity may mediate the association between childhood motor function and adolescents' academic achievement.

It is interesting to note that nutritional status was positive and highly significant associated between participation in extracurricular activities at one per cent level. This study is supported by the results reported by Suvarna (2007), who conducted study on nutritional status and level of intelligence of school children. The research study was conducted in Dharwad district on a 102 rural school children aged between 7-10 years. The results indicated that the nutritional status was positively correlated with age of children. The nutritional status was positively correlated with intelligence, socio economic status and level of participation in extracurricular activities (0.39**).

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■ REFERENCES

Adeladza, A.T. (2009). The influence of socio-economic and nutritional characteristics on child growth in Kwale district of Kenya. *American J. Food Agric. Nutr. Develop.,* **9** (7) : 1570-1590.

Aggarwal, O.P., Bhasin, S.K., Sharma, A.K., Chhabra, P., Aggarwal, K. and Rajoura, O.P. (2005). A new instrument (scale) for measuring the socioeconomic status of a family : preliminary study. *Indian J. Commun Med.,* **30** (4) : 111-114.

Bartko, W. and Eccles, J. (2002), Adolescent participation in structured and unstructured activities: a person-oriented analysis. *J. Youth & Adolesc.*, **32**(4): 233-241.

Edris, M. (2007). Assessment of nutritional status of preschool children of Gumbrit, North West Ethiopia. *Ethiopian J. Health*, **21**(2):125-129.

Huang, C. and Carleton, B. (2003). The relationships among leisure participation, leisure satisfaction and life satisfaction of college students in Taiwan. *J. Exer. Sci. & Fitness*, **1**(2): 129-132.

Jovanovic, R., Nikolovski, D., Raduloviæ, O., Sonja Novak, S. (2010). Physical activity influence on nutritional status of pre-school children, *Acta Medica Medianae*: **49**(1):17-21.

Marko, T. Kantomaa, Emmanuel Stamatakis, Anna Kankaanpää, Marika Kaakinen, Alina Rodriguez, Anja Taanila, Timo Ahonen, Marjo-Riitta Järvelin and Tuija Tammelin (2013). Physical activity and obesity mediate the association between childhood motor function and adolescents' academic achievement. **110**(5) : 1917-1922.

Mondal, B., Chattopadhyay, M. and Gupta, R. (2005). Economic condition and nutritional status: A micro level study among tribal population in Rural West Bengal, India. *Malaysian J. Nutr.,* **11**(2): 99-109.

Table 5 : Relationship between participation in extracurricular activities and nutritional status (n=75)

Nutritional status	Participation in extracurricular activities			Modified χ^2 value
	Low (n=13)	Medium (n=49)	High (n=13)	
Normal (n=30)	1(1.33)	17(22.66)	12(16.0)	
Wasted (n=4)	-	4(5.33)	-	
Stunted (n=30)	5(6.66)	24(32)	1(1.33)	4.31**
Wasted and stunted (n=11)	7(9.33)	4(5.33)	-	

** indicate significance of value at P=0.01
Figures in parenthesis indicate percentages

Rathod, A. R. (2007). A study on sustainable livelihoods of Lambani farmers in Hyderabad, Karnataka, M.Sc. (Ag.) Thesis, University Agricultural Science, Dharwad, KARNATAKA (INDIA).

Satyan (2013). Reported Attapadi malnutrition. Times of India, June 6, 2013.

Seabra, A.F., Mendonca, D.M., Thomis, M.A., Peters, T.J., and Maia, J.A. (2007). Association between sport participation, demographic and socio-cultural factors in Portuguese children and adolescents. *European J. Public Health*, **18** (1) : 25-30.

Srivastava, A., Mahmood, S.E., Srivastava, P.M., Shrotriya, V.P. and Kumar, B. (2012). Nutritional status of school age children – A scenario of urban slums in India. *Archiv. Public Health*, **70**: 1-8.

Suvarna (2007). Nutritional status and level of intelligence of school children, M.HSc. Thesis, Thesis, University Agricultural Science, Dharwad, KARNATAKA (INDIA).

Torre, G.L., Masala, D., Elisabetta, D.V., Langiano, E., Giovanni,C. and Ricciardi, W. (2006). Extra-curricular physical activity and socioeconomic status in Italian adolescents. *BMC Public Health,* **6**:22.

Waterlow, J.C. (1972). Classification and definition of protein-calorie, malnutrition. *Br. Med. J.,* **3**: 566-569.

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