



The Growth Pattern of Preschool Children (2-5 yrs) of Chhattisgarh (India) in relation to Height and Weight

Studies on growth and development in a community is necessary in getting information about the nutritional profile of a community(12). The objective of the study is to assess the growth pattern of preschool children (2-5 yrs) in terms of two anthropometric parameters namely height and weight and to compare it with the WHO standards. A study was carried out among 240 children (120 males and 120 females) of anganwadis from different sectors of Raipur city of Chhattisgarh. The samples were collected using structured interview schedule and semi-participant observation. The results showed that the mean height and weight of the children of anganwadi groups were increasing with age and were found significantly shorter and lighter ($p < 0.05$) on comparing with WHO standards.
Key Words : Growth, Preschoolers, Height, Weight, Anganwadi, WHO.

RASHMI JAISWAL* & DR. ARUN KUMAR**

Introduction :

The measurement of growth of children is one of the most sensitive and commonly used indicators of child health (13). About 60% of child deaths in developing countries occurs due to under nutrition (3, 8, 9) and is more prevalent among the poor households who are more likely to suffer food and nutritional insecurity due to lack of food & resources, low educational level and poor utilization of health care (4,10,14). The process of growth and development is a characteristic feature of all living beings. Normal growth is an indicator of optimum health and any deviation from the normal pattern is indicative of a pathological process. Therefore, periodic assessment is necessary to detect growth faltering which may be the first sign of over/ under nutrition and infection/ disease. In this study, anthropometric data on weight and height were examined and compared with the international WHO standards in order to study the growth patterns of preschool children.

Materials and Methodology :

An analytical cross-sectional study of 240 children (120 males and 120 females) was carried out among 10 anganwadi centres of Raipur city of Chhattisgarh. The samples were collected using structured interview schedule and semi-participant observation. Height and weight of the children were taken in minimum standard clothing through anthropometer rod and electronic weighing machine respectively. The weight scale was adjusted to zero error each time the subject was weighed. The age of each subject was recorded from the anganwadi

registers. Significance test was done by performing t-test at 5% level of significance. Statistical software SPSS version 16 was used.

Results & Discussion :

Table No 1 : Comparison of Height of Anganwadi Respondents with WHO standards

Age (Yrs)	Mean ht.of male respondents(in cm)			Mean ht.of female respondents(in cm)		
	Present study	WHO	P-value	Present study	WHO	P-value
2+	84.01	91.4	0.023*	83.31	90.1	0.028*
3+	87.02	99.4		85.66	98.65	
4+	90.23	106.3		89.17	105.8	
5+	91.98	109.9		91.94	109.4	

*significant at 5% level

Table no. 1 depicts the comparison of present study with the WHO standards. The anganwadi boys & girls of the present study are found shorter as compared to the WHO standards through all the ages. Highly significant differences ($p < 0.05$) have been observed between the mean values of both groups.

Table No 2 : Comparison of Weight of Anganwadi Respondents with WHO standards

Age (Yrs)	Mean wt.of male respondents(in kg)			Mean wt.of female respondents(in kg)		
	M (N=120)	WHO	P-value	F (N=120)	WHO	P-value
2+	10.57	13.19	0.007*	10.45	12.6	0.013*
3+	11.04	15.25		10.80	14.87	
4+	11.69	17.25		11.45	17.06	
5+	12.17	18.3		12.14	18.2	

*significant at 5% level

*Research Scholar, S.o.S in Anthropology, Pt. Ravishankar Shukla University, Raipur (Chhattisgarh)

**Professor, S.o.S in Anthropology, Pt. Ravishankar Shukla University, Raipur (Chhattisgarh)

It has been revealed from table no. 2 that the mean weights of the studied children at each age group is lower than those of WHO standards and thus are found lighter on comparing with the standards. Student t-test shows significant results ($p < 0.05$) between the present samples and WHO standards.

Discussion & Conclusion :

This study presents a glimpse of growth status of preschool children (2-5 yrs) in terms of height and weight. In the present study, it has been observed that the mean height and weight of the studied anganwadi children are found increasing with progressing age which resembles the studies of Bener & Kamal (2005) and Hunshal et al.(2010). The studied boys at all age groups are found taller and heavier than those of girls. Khadilkar et al (2009) found the mean values of height and weight far below the WHO 2006 standard which shows similarity with the findings of present study .On comparing the present data with the international WHO standards, noticeable differences have been observed in the case of both height and weight which might be due to socio-economic disparities between the two. Inadequate dietary intakes are the main cause of undernutrition and growth retardation in early childhood in early communities. The differences in mean height and weight between boys and girls of anganwadis are found non-significant ($p > 0.05$) whereas highly significant ($p < 0.05$) results are obtained while comparing the mean height and weight of the present samples with WHO standards.

It can be concluded from the study, that there are significant disparities in anthropometric parameters of preschool children belonging to the upper and lower socioeconomic status with upper class being significantly heavier and taller. Lack of awareness among anganwadi groups and socioeconomic disparities are responsible for these variations. Therefore, there is an urgent need to initiate effective intervention programmes for improving the growth and nutritional status of the children. It's a peak time to create awareness among children and their parents regarding physical growth and health. Proper care and nutrition should be provided to the children right from their early childhood.

References :

(1) Agarwal, D.K. & Agarwal, K.N. (1994) : *Physical growth in Indian affluent children (birth- 6 yrs)*. *Indian Pediatrics*,31:377-413.

(2) Bener A, Kamal, A. (2005) : *Growth pattern of Qatari school children and adolescents aged 6-18 years*. *Journal of Health Population and Nutrition*, 23(3):250-258.

(3) Food and Agricultural Organization (FAO) (2005) : *The State of Food Insecurity in the World: Eradicating World Hunger Key to Achieving the Millennium Development Goals*.Rome,Italy.

(4) Food and Agricultural Organization (FAO) (1997) : *Food and Agricultural Organization of the United Nations; Rome: 1997. Human Nutrition in the Developing World*.Rome

(5) Hunshal S.C., Pujar, L, Netravati, H.S.(2010) : *Physical growth status of school going children, Karnataka*. *Journal of Agricultural Science*,23(4):625 -627.

(6) Kapur, D., Sharma, S. & Agarwal, K.N. (2005) : *Dietary intake and growth pattern of children 9-36 months of age in an urban slum in Delhi*. *Indian Pediatrics*,42:351-356.

(7) Khadilkar, V.V., Khadilkar, A.V., Cole, T.J. & Sayyad, M.G. (2009) : *Cross-sectional growth curves for height, weight and body mass index for affluent Indian children*. *Indian Pediatrics*,46:477-489.

(8) Levinston F.J. & Bassett L.(2007) : *Malnutrition is Still a Major Contributor to Child Deaths : But Cost-Effective Interventions Can Reduce Global Impacts*. *Population Reference Bureau(PRB); Washington, DC, USA/*

(9) Pelletier D.L., Frongillo E.A., Schroeder. D.G. & Habicht, J.P. (1995) : *The effects of malnutrition on child mortality in developing countries*. *Bulletin of the World Health Organization*, 73:443-448.

(10) Peña M. & Bacallao J. (2002) : *Malnutrition and poverty*. *Annual Review of Nutrition*, 22:241-253.

(11) Singh, I.P. & Bhasin, M.K.(1968) : *Anthropometry : Laboratory Manual of Biological Anthropology*. Delhi: Kamal Raj enterprises.

(12) Vijayaraghavan, K., Singh, D. & Swaminathan, M.C. (1971) : *Heights and weights of well-nourished Indian school children*, *Indian Journal of Medical Research*, 62:994-1001.

(13) World Health Organization (1981) : *Growth monitoring of preschool children: Practical consideration for PHC projects*. *Primary Health Care Issues*, 1(3):170.

(14) World Bank (2010) : *Lessons from a Review of Interventions to Reduce Child Malnutrition in Developing Countries: What Can We Learn from Nutrition Impact Evaluations?* *The World Bank; Washington, DC*.



UGC -

APPROVED - JOURNAL

UGC Journal Details

Name of the Journal : Research Link

ISSN Number : 09731628

e-ISSN Number :

Source: UNIV

Subject: Accounting, Anthropology, Business and International Management, Economics, Econometrics and Finance(all); Education, Environmental Science(all); Finance; Geography, Planning and Development; Law, Political Science a, Social Sciences(all)

Publisher: Research Link

Country of Publication: India

Broad Subject Category: Arts & Humanities; Multidisciplinary; Social Science