Journal Homepage: - www.journalijar.com
INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)
Article DOI: 10.21474/IJAR01/3482
DOI URL: http://dx.doi.org/10.21474/IJAR01/3482
ISSN NO. 2320-5407

RESEARCH ARTICLE

Prevalence of Nutritional Anaemia among patients reporting to Saveetha Dental College: A SHORT STUDY.

Dr. Lakshmi. C and Dr. G. Maragathavalli.

Manuscript Info

Manuscript History

Received: 08 January 2017 Final
Accepted: 05 February 2017
Published: March 2017

Abstract

Nutritional anaemia affects all the age groups and sex in developing countries like India. Iron deficiency is the most common micronutrient deficiency in the world affecting more than 2 billion people. In the present study, 50 patients were selected who were subjected to routine hemogram and were diagnosed anaemic. 2 ml of venous blood was drawn and analysed using autoanalyser method and were interpreted according to the WHO criteria. The study showed that 13 % of the patients were mildly anaemic, 34% were moderately anaemic and 03% were severely anaemic. Various factors like social, economic status, age, sex, social class, dietary habits are some of the major etiological factors for nutritional anaemia.

Aims & Objectives:-

Aim:-
To study the prevalence of nutritional anaemia among the patients.

Objectives:-
Measuring the incidence of anaemia among the selected patients using hemoglobin percentage as cut off value provided by WHO.
To find out correlation between dietary habits and prevalence of anaemia.

Introduction:-

Nutritional anaemia is a worldwide problem with the highest prevalence in the developing countries. It frequently occurs due to inadequate iron intake, chronic blood loss or disease, malabsorption or a combination of these factors.
Nutritional anaemia is prevalent all over the world with an estimated 2 billion people being iron deficient and is one of the most common nutritional disorders in the developing world. With an average prevalence of 40% among the general population that it affects nearly two third of pregnant and one half of non pregnant women which is three to four times higher than that in the developed countries, where prevalence of anaemia is between 4-12% among women of child bearing age (WHO/UNICEF 2001). Iron deficiency can arise either due to inadequate intake or poor bioavailability of dietary iron or due to excessive losses of iron from the body. Although most habitual diets contain adequate amounts of iron only a small amount (less than 5 %) is absorbed. This poor bioavailability is considered to be a major reason for the widespread iron deficiency. Women lose a considerable amount of iron especially during menstruation. Most commonly, people will anaemia report feelings of weakness, fatigue, general malaise and sometimes poor concentration and dysnoea on exertion.

Corresponding Author:- Lakshmi C.

In India, recent data from the District Nutrition Project (ICMR) in 16 districts and 11 states on prevalence of anaemia in non-pregnant adolescent girls (11-18 years)showed rates as high as 90.1% with severe anaemia (Hb≤7gm/dl) in 7.1% (Teoteja G.S, Singh P, 2002).
By far, the most frequent cause of nutritional anaemia isiron deficiency and less frequently folate or Vitamin B12 deficiency.

Materials & Methods:-

A cross sectional study was done among patients reporting to the institute. The age group of the patients were from 18- 65 years.

A total of 50 patients were taken. Study procedure was explained to the patient and a written informed consent was taken. All the patients' demographic details, habit history, dietary patterns etc., were collected in a structured questionnaire. A detailed clinical history taken from them for any present symptom regarding anaemia and physical examination was done to look for anaemic signs and symptoms and the same was noted in the proforma. The data and privacy of the patients were protected. 2 ml venous blood was obtained and the blood hemoglobin was estimated using the autoanalyser method and interpreted as per WHO criteria. Anaemia is established if the hemoglobin is below the cut off points as recommended by WHO.

INDICATOR	HB (gm/dl)
Non - anaemic	≥13 (males); ≥12 (females).
Grade 1 (mild) anaemia	10.0 -11.9
Grade 2 (moderate) anaemia	7.0-9.9
Grade 3 (severe) anaemia	≤7

Results:-

In the present study anaemia was observed in all the patients.

Figure 1:- Sex wise distribution of anaemia among patients.

MALES	FEMALES	TOTAL
03(6%)	47(94%)	50(100%)

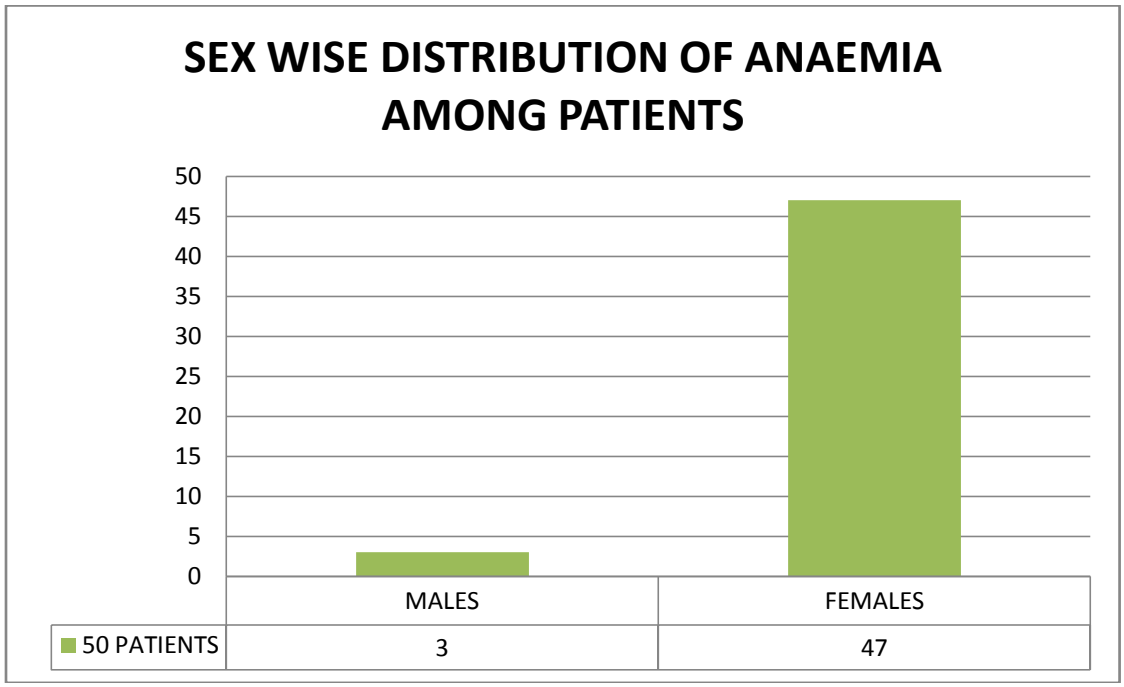


Figure 2:- Sex wise grading of severity of anaemia (WHO Criteria).

GRADING	MALES	FEMALES	TOTAL
MILD	1(1%)	12(12%)	13%
MODERATE	2(2%)	34(34%)	34%
SEVERE	0(0%)	03(3%)	03%

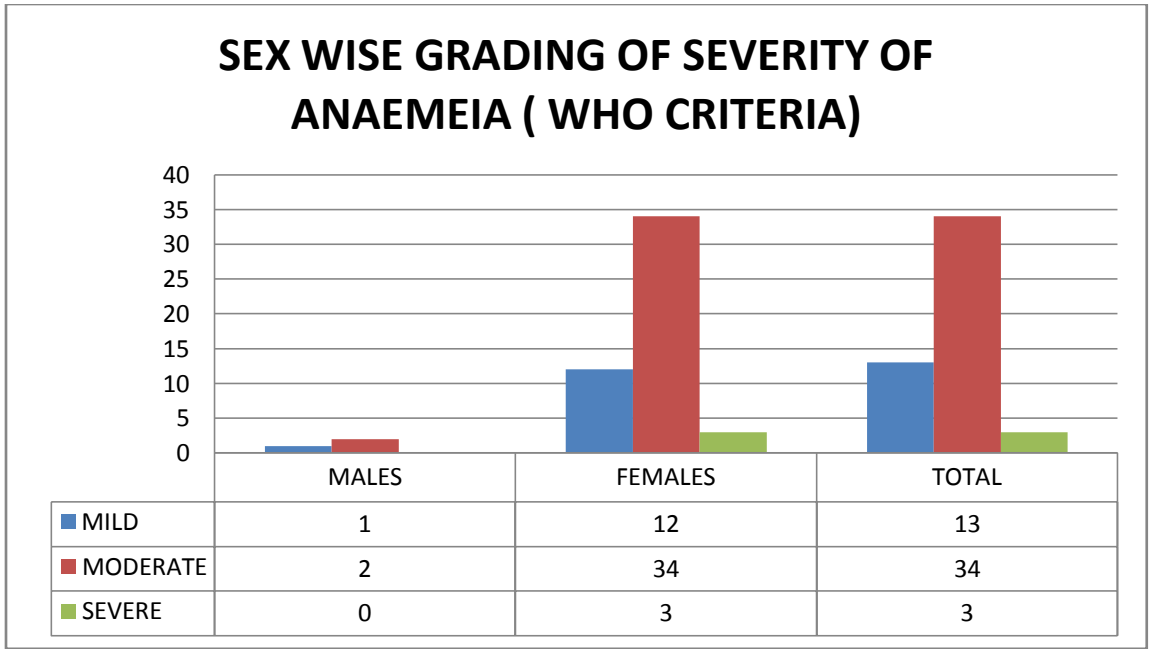
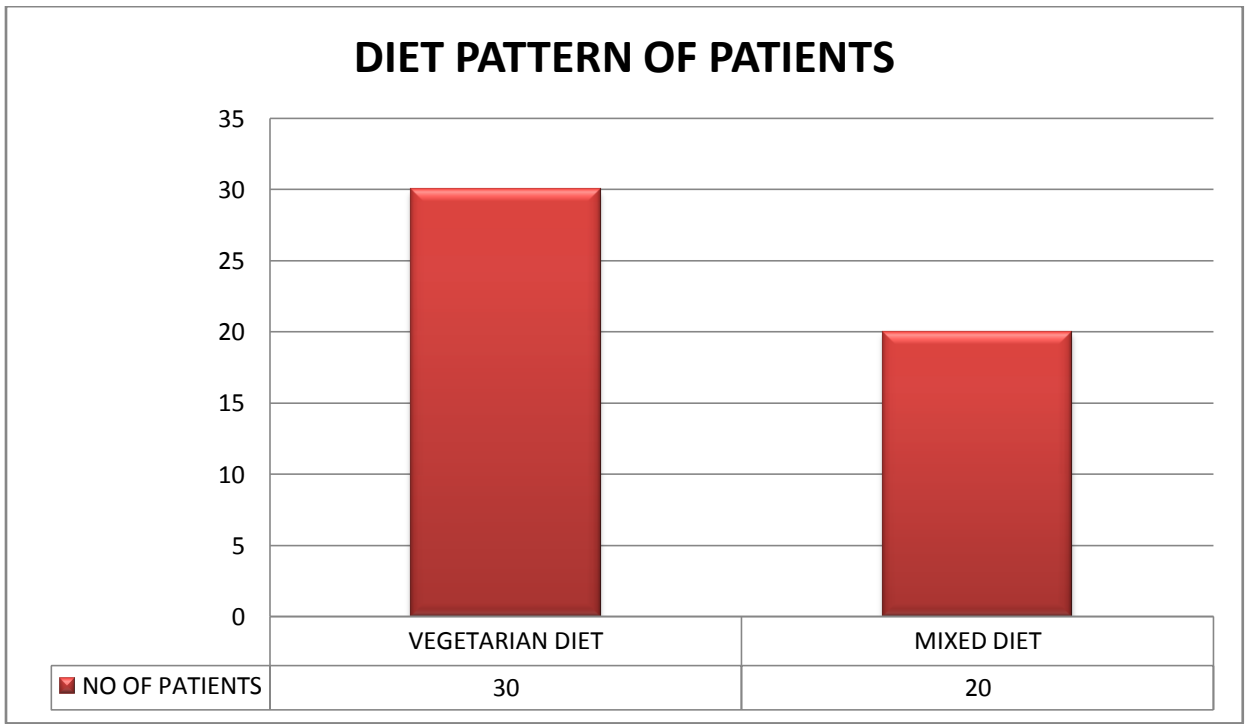


Figure 3: Dietary Pattern Of Patients :

VEGETARIAN DIET	30 (60%)
MIXED DIET	20 (40%)



Discussion:-

Nutritional anaemia is a major health threat to the developing countries. Interventions like iron and folic acid supplementation and other strategies such as diet modification, infection control, nutrition education must be undertaken.

Iron deficiency can be caused due to either inadequate intake, poor bioavailability of dietary iron or due to excessive loss of iron from the body.

Nutritional ananemia especially iron deficiency anaemia is more prevalent among women in the adolescent and reproductive age group due to menstrual blood loss, poor diet, bleeding during parturition etc.,
Patients must be monitored periodically, iron supplements and diet counseling should be given.
In this study there is no significant correlation between the diet pattern of the patient and anaemia.

Conclusion:-

Nutritional anameia especially iron deficiency anaemia is more prevalent among females especially adolescent girls due to causes like menstrual blood loss, poor diet and under nutrition as compared to males. Nutritional anaemia is easily preventable as well as treatable and the available measures are relatively affordable. Iron supplementation is required for this group of patients.periodical screening, health check ups and routine hemograms must be performed. The patients shoud be motivated and educated about the importance of a balanced diet, nutritional supplements. If anaemia is severe, high doses of iron or blood transfusion may be necessary.

Further studies with large sample size are required to estimate the exact prevalence of nutritional anaemia in the target population so that appropriate preventive and treatment measures can be initiated.

References:-

1. Aggarwal, K.N.: Assessment of prevalence of anaemia and iron in response to daily/weakly iron folate supplement in adolescent girls (10-18) from urban slums of North Delhi. UNICEF Contract No. 95/ 0075/1998, 1-9 (1998).
2. Bansal B., Takker J., Soni N.D, Aggarwal D.K, Aggarwal S.; Comparative study of prevalence of anaemia in muslim and non-muslim pregnant women of western Rajasthan. International Journal of Research in Health Sciences 2013, Vol. I, Issue 2. PP.47-52.
3. Bano R., Ahmed N., Sharma B.C, Aggarwal A.; Nutritional Anaemia in Medical Students. Indian Medical Gazette, January 2012. PP. 16-18
4. Bhatia, D. and Seshadri, S.: Growth performance in anaemia and following iron Supplementation. Ind. Ped. 30: 195- 200 (1993).
5. Bulliyy G, Mallick G, Sethy GS, Kar SK. Hemoglobin status of non school going adolescent girls in three districts of Orissa, India. Int J Adolesc Med Health 2007; 19: 395– 406.
6. Chaturvedi, S. and Kapil, U.: Nutrient intake among adolescent girls belonging to poor socioeconomic groups of rural area of Rajasthan. Indian Pediatrics, 331: 197-201 (1996).
7. Das DK, Biswas R. Nutritional Status of Adolescent Girls in a Rural Area of North 24 Parganas District, West Bengal. Ind J Public Health 2005; 49: 18–21
8. DeMaeyer EM. A guide for health administrator. WHO; 1989. Preventing and controlling iron deficiency anaemia through primary health care; p. 26
9. Demaeyer, E.M.: Preventing and controlling iron deficiency anaemia through primary health care. World Health Organization, Geneva (1989).
10. Gawarikar, R.S., Gawarikar, S.B. and Tripathi, B.C.: Prevalence of anaemia in adolescent girls of Ujjain in Western M.P. Indian Journal of Nutrition and Dietetics, 39: 493-499 (2002).
11. Goel S, Gupta BP. Low Anaemia Prevalence among Adolescents of an Urban Hilly Community. Indian Journal of Community Medicine 2007; 32: 67–68
12. Gomber, S., Kumar, S., Rusia, U., Gupta, P., Agarwal, K.N. and Sharma, S.: Prevalence and etiology of nutritional anaemia in early childhood in an urban slum. Ind. J. Med. Res., 107: 269-273 (1998).
13. Gopaldas, T. and Kale, M.: Prophylactic iron supplementation for underprivileged schoolboys. Indian Pediatrics, 22: 731-743 (1985).
14. Gupta, V.M. and Shukla, K.K.: Epidemiology of anaemia in preschool children from a rural and a slum community, Varanasi. Ind. J. Prev. Soc. Med., 15: 85-89 (1985).

15. Hanan S., Gilani A.H., Haq I.U. Anaemia in adolescent college girls: Effect of age, nutritional status and nutrient intake. Pakistan Journal of Science, Vol. 62, No. 4, December 2010.
16. ICMR (Indian Council of Medical Research): Studies on preschool children. Technical Report Series. No. 26. ICMR, New Delhi (1977).
17. ICMR (Indian Council of Medical Research): A reappraisal of the iron status indicators. ICMR Bull., 27: 100-105 (1997).
18. INACG (International Nutrition Anaemia Consultative Group): Measurement of iron status. INACG, Washington, D.C (1985).
19. Kapil, U.: Prevention and control of iron deficiency anaemia amongst young children. Ind. Ped. 40: 293-295 (2003).
20. Kapur, D., Agarwal, K.N. and Sharma, S.: Detecting iron deficiency anaemia among children (9-36 months of age) by implementing a screening program in an urban slum. Ind. Ped., 39: 671-676 (2002).
21. Kaur G, Chhatwal J, Verma M. Prevalence of anaemia among urban school children of Punjab. Indian pediatr 1998;35(12):1181-86
22. Kaur M., Kochar G.K; Burden of anaemia in rural and urban jat women in Haryana State, India. Mal J. Nutr. 15(2); 175-184, 2009.
23. Kunt, K.M. and Johnson, W.C.: The nutrition and lives of adolescents in developing countries. The nutrition of adolescent girls reach program. International Centre for Research on Women. Washington, D.C. (1994).
24. Li R, Chen X, Yan H, Deurenberg P, Garby L. Functional consequences of iron supplementation in iron-deficient female cotton mill workers in Indian J Physiol Pharmacol 2011; 55(4) Nutritional Status and Anaemia in Medical Students 369 Bejing, China. Am J Clin Nutr 1994; 59: 908– 913.
25. Malhotra, A.K. and Srivastava, R.N.: A study on impact of socio-economic status on hemoglobin levels of rural school children of district Wardha. Indian Journal of Preventive and Social Medicine, 13: 95- 99 (1982).
26. Mehta, M.N.: Effectiveness of Daily Iron and Weekly Iron and Folic Acid Supplementation in Anaemic Adolescent Girls. UNICEF Funded Final Report of the Research Project, Bombay Urban ICDS Project, 21-25 (1998).
27. Must, A.; Dallal, G E & Diet, W.H. (1991). Reference data for obesity: 85th & 95th percentiles of body mass index (Wt/ Ht2)- a correction. American journal of Clinical Nutrition. 54:773
28. Nelson M, Bakaliou F, Trivedi A. Iron deficiency anaemia and physical performance in adolescent girls from different ethnic backgrounds. Br J Nutr 1994; 72: 427–433.
29. NFHS II. Nutrition and prevalence of anaemia in adolescence. National Family Health Survey II India, main report. International institute of population Science, Mumbai 2000.
30. National Family Health Survey (NFHS III) India,2005- 2006.www.nfhsindia.org
31. NIN (National Institute of Nutrition): A Longitudinal Study on Control and Prevention of Iron Deficiency Anaemia in a Rural Indian Population. Annual Report. ICMR, Hyderabad Paper ID: SUB152505 1885 International Journal of Science and Research (IJSR) ISSN (Online): 2319-7064 Index Copernicus Value (2013): 6.14 | Impact Factor (2013): 4.438 Volume 4 Issue 3, March 2015 www.ijsr.net Licensed Under Creative Commons Attribution CC BY (1986-87).
32. Pandey S., Singh A.; A Cross Sectional Study of Nutritional anaemia among medical students in a medical college at Bilaspur, Chhatisgarh. National Journal of Medical Research (2013), Vol. 3(2), PP. 143-146.
33. Panat A.V, Sambhaji A.P, Asrar S. and Rohokale G.Y; Iron deficiency among rural college girls: A result of poor nutrition and prolonged menstruation. Journal of Community Nutrition and Health 2013, Vol. 2, Issue 2, PP. 56-60..
34. Patel H., Solanki H., Gosalia V., Vora F.,Singh M.P. A Study on awareness of nutrition and anaemia among college going students of mahila college of Bhavnagar. National Journal of Community Medicine (2013) ,Vol. 4, Issue 2.
35. Patil MC, Shailja S, Algeer, Veena. A study of knowledge and prevalence of anaemia among female students of Shri B M Patil nursing college, Yadavannavar. International journal of current research & review 2011; 3(11):80
36. Paul RC. Prevalence of Iron deficiency anaemia in India: Results from a nationwide survey. Journal of population and social studies 2010;19(1):2806
37. Rajaratham, J., Rajaratham A., et al.: Prevalence of anaemia among girls of Tamil Nadu. Indian Pediatrics, 37: 532-536 (2000).
38. Richard LG, Foerster J, Lukem J, Paraskevas F, Green JP, Rodgus GM, Iron deficiency and iron deficiency anaemia, Wintrobe's Clinical Haematology. 10th ed. Baltimore: Interprint; 1999; p 979-1010.

39. Saibaba A, Ram MM, Ramana Rao GV, Devi U, Syamala TS 2002, "Nutritional status of adolescent girls of urban slums and the impact of IEC on their nutritional knowledge and practices", Indian Journal of Community Medicine, 28 (4).
40. Sanjeev M Chaudhary and Vasant R Dhage. A Study of Anaemia among Adolescent Females in the Urban Area of Nagpur. Indian J Community Med. 2008 October; 33(4): 243–245
41. Saratha A, Singh Z, Datta SS et al. Prevalence of anaemia among adult female students in a medical teaching institution in Pondicherry. Indian journal of maternal and child health 2010 oct- dec ; 12(4)
42. Seshadri, S.: A Data Base on Iron Deficiency Anaemia (IDA) in India: Prevalence, Causes, Consequences and Strategies for Prevention. The Maharaja Sayajirao University of Baroda, Vadodadra (1998).
43. Seshadri, S., Hirode, K., Naik, P., Shah, A. and Gupta, V.: An effective intervention to reduce the prevalence of anaemia in children. Ind. J. Med. Res., 80: 164-173 (1984).
44. Sexsena Y., Shrivastava A. and Sexsena V.; Effect of Gender on correlation of anaemia with Body Mass Index in medical Students. Indian Journal of Physiol. Pharmacol. 2011; 55 (4), PP. 364-369.
45. Shams S, Asheri H, Kianmehr A, Ziaee V, Koochakzadeh L, Monajemzadeh M, Nouri M, Irani H, Gholami N. The prevalence of iron deficiency anaemia in female medical students in Tehran. Singapore Med J 2010; 51(2) : 116
46. Sharma S.K, Narain K., Devi K.R, Mohapatra P.K., Phukan R.K, Mahanta J. Haemoglobinopathies- Major associating determinants in prevalence of anaemia among adolescent girl students of Assam, India. WHO South East Asia Journal of Public Health 2012; 1(3), PP.299-308.
47. Sidhu, S.: Age at menarche among Scheduled Caste girls of Punjab. Journal of Human Ecology, 13: 317-328 (2002).
48. Sidhu, S.: Incidence of anaemia among scheduled caste children of Mahl village in Amritsar district of Punjab. J. Hum Ecol., 8: 495-497 (1996).
49. Sidhu, S., Kumari, K. and Uppal, M.: Prevalence of anaemia in Scheduled Caste preschool children of Punjab. Ind. J. Med. Sci., 56: 218-221 (2002).
50. Sidhu, S., Kumari, K. and Uppal, M.: Prevalence of anaemia among adolescent girls of Scheduled Caste Community of Punjab. Anthropologist Journal, 7(4); 265- 267 (2005).
51. Sidhu, S., Kumari, K. and Uppal, M.: Prevalence of anaemia in Bazigar (Ex-nomadic tribe) Preschool Children of Punjab. J. Hum Ecol., 21 (4); 265-267 (2007).
52. Sivakumar, B., Breahman, G.N.V., Madharan N.K., Ranganathan, S., Visnuvardha Rao, M., Vijayaraghabvan, K. and amalakrishnaswamy: Prospects of fortification of salt with iron and iodine. British Journal of Nutrition, 85: 167 (2001).
53. Sultan AH. Anemia among female college students attending the university of Sharjah, UAE; Prevalence and classification .J Egypt Public Health Association (2007)
54. Swami, M.M., Thakur, J.S. and Bhatia, S.P.S.: Prevalence of anaemia in rural area of Chandigarh. Ind. J. Mat. Child Health, 9: 62-64 (1998).
55. Teoteja GS, Singh P. Micronutrient profile in Indian population (Part-I). New Delhi: Indian Council Medical Research, 2002; p 131-140.
56. Vasanthi, J. and Pawashe, A.B.: Iron nutritional status of adolescent girls from rural area and urban slums. Indian Pediatrics, 31: 127-132 (1994).
57. Verma M, Chhatwal J, Kaur G. Prevalence of anaemia among urban school children of Punjab. Indian Paediatrics 1998; 35: 1181–1186.
58. Verma A, Rawal VS, Kedia G, Kumar D, Chauhan J. Factors influencing anaemia among girls of school going age (6-18 years) from the slums of Ahmadabad city. Indian J Community Medicine 2004; 29: 25–26.
59. Visweswara Rao, K.: Vital Statistics and nutritional status of Indians. Indian Journal of Nutrition and Dietetics, 24: 272-297 (1987).
60. Visweswara Rao, K., Radhaiah, G. and Raju, S.V.S.: Association of growth status and the prevalence of anaemia in preschool children. Ind. J. Med. Res., 71: 237-246 (1980).
61. WHO/UNICEF/UNU 2001. Iron deficiency anemia: Assessment, prevention and control. A guide for programme managers. Available from: http//www.who.int/nut/documents /ida_assessment_ prevention control.
62. World Health Organization. Physical status: The use and Interpretation of Anthropometry. Technical Report Series No.854.Geneva: World Health Organization; 1995.