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RESEARCH ARTICLE

PREVALENCE OF ANAEMIA AMONG ADOLESCENTS IN SELECTED RURAL COMMUNITIES OF DISTRICT AMRITSAR, PUNJAB.

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Abstract

Background: Adolescence is a "coming of age", as children grow into young adults. This teen age is a period of intense growth, not only physically, but also mentally and socially. Because of this rapid growth, adolescents are especially vulnerable to anaemia. It is a long standing problem in India and the country has a high prevalence of anaemia among adolescents. **Material and method**: An epidemiological study to assess the prevalence of anaemia among adolescents in selected rural communities of district Amritsar, Punjab. There were 300 adolescents(age 13-18years) selected by convenience sampling. The research instrument was consisted three parts; part-A socio-demographic profile, Part-B Hb check by Sahil's method and Part-C Semi structured interview. **Results:** A total of 300 adolescents went under gone Hb check up by Sahil's method. The study reveals that the prevalence of anaemia among adolescents i.e.73.7% mentioned moderate anaemia, followed by 20.3% were mild anaemia and 2% belonged to severe anaemia. **Conclusion:** In conclusion, the study showed that there was significant association between age, gender, education status of father and mother, family income, dietary pattern, junk food, intake of fruits. Hence it can be inferred that there is a need for enhancement of knowledge of adolescents regarding healthy life style to prevent anaemia by means of pamphlets so as to improve and maintain the health status of adolescents and prevent the occurrence of anaemia.

Introduction:-

The World Health Organization (WHO) estimated that about 40% of the world's population suffer from anaemia. The prevalence of anaemia in adolescents are 30-55% globally. The WHO has suggested the following classification of countries with respect to the level of public health significance of anaemia: a prevalence of 15% is low, 15-20% is medium and >40%is high. Asia has the highest rates of anaemia in the world.[1] India is home to nearly 113 million adolescent girls between the age of 11 and 18 years and 90% of them live in the 15 largest states of the country. As estimated 56% of adolescents girls in India are anaemic and this amounts to an average million girls at any point of time.[2]

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Anaemia is the lack of sufficient circulating hemoglobin to deliver oxygen to tissues. This is global public health problem which affects the developing and developed countries. It is an indicator of poor nutrition and poor health with consequences for human health, as well as for the social and economic development of a population[3] The prevalence of anaemia in the developing countries tends to be three to four times higher than in the developed country. Anaemia affects the physical and mental development of an individual leading to decreased working capacity, which in turn affects the development of country.[4]As a researcher during my clinical experience came across many adolescents who were suffering from anaemia and found this is growing problem which is cause of concern in our society. So we proposed to investigate this topic with the aim to find the prevalence of anaemia among adolescents.

Objectives:-

1. To assess the prevalence of anaemia among adolescents.
2. To find out association of anaemia among adolescents with selected variables.
3. To develop and distribution of pamphlet on prevention of anaemia.

Material and Methods:-

This was a quantitative research approach and research design was non-experimental epidemiological study to assess the prevalence of anaemia among adolescents in selected rural communities at Amritsar, Punjab. The rural communities had recruited which are under in Sri Guru Ram Institute of Medical Sciences and Research. The written permission were taken from research and ethical committee of SGRDIMSR Amritsar. The 300 adolescents(age 13-18 years) were selected by non-probability convenience sampling technique. Inclusion criteria: Adolescents who were residing in the selected rural communities of district Amritsar. And those who were willing to participate in this study. Exclusion criteria: Adolescents who were terminally ill and who were not available during data collection. The research instrument was consisted of three parts like Part-A Semi structured interview , Part-B Hb estimation (Sahil's method), Level of Anemia according to WHO. The content validity of the tool was determined by expert opinion from nursing and medical faculty. The reliability of tool was estimated by Cronbach's alpha method for semi structured interview which was 0.72 and others two tool were standardized. Researcher explained the aims and objectives of the study to the participants. The study was carried out in January 2014. The written consent was taken from each participants.

Results:-

The study showed the frequency and percentage distribution of socio-demographic characteristics of the adolescents. A total 300 adolescents ages 13-18 years for theirs prevalence of anaemia were studied. Distribution of the subjects according to age of adolescents revealed that the maximum of adolescents i.e. 21%(63) were 18years old followed by 20.3%(61) of aged 17 years and the least i.e. 12.7% (38) were in age group 13. As per gender found that 49% (147) were male and 51%(153) were female with regard to number of adolescents were unmarried i.e.100%(300). In context of religion, majority of them i.e. 97%(290) belonged to Sikh, followed by 2.3%(7) belonged to christen and only 0.7%(2) had Hindu religion. As per the type of family more than half of the adolescents i.e. 52.7%(158) belonged to nuclear family. Followed by 47.3% (142) belonged to joint family. Distribution of study subjects according educational status of mother depicted that 40% (120) were informal educated, a few i.e. 0.7%(2) were graduate and educational status of father i.e. 30.3%(91) were educated up to secondary level .According to occupational status of father i.e. 59%(177) belonged to others and the least i.e. 0.3%(1) were unemployed and businessmen and mothers showed that 89.9%(268) were housewives. Distribution of study subjects according to total monthly family income revealed that more than half of the families i.e. 54.3%(163) were earning Rs. 5000-10000 and few i.e. 3%(9) families were earning 15001-20000. As per dietary pattern in adolescents more than half i.e. 63%(189) of were vegetarian and few i.e. 1.7%(7) were eggitarian. As per frequency of intake of junk food, more in adolescents that took junk food once in week i.e. 55% (165) and only 5%(15) were taking daily. According to intake of green leafy vegetables showed that maximum adolescents took green leafy vegetables in alternate days i.e. 74.7% (224) and least took i.e. 3%(9) were once a week. History of chronic illness showed that 95.5%(286) were no any history of chronic illness and few i.e. 0.3%(1) and 0.7%(2) were suffering since >4 years. As per menarche girls attained 46.7% (140) and only few girls i.e. 4.7% (14) did not attained menarche. As per duration of blood flow in menstruation showed that more than half i.e. 27.7% (83) had duration of blood flow for 4-5 days and 3.3%(10) were >5 days.

Table No.1:- Hb estimation (used Sahli's method) among adolescents. N=300

Hb Level (gm/dl)	f	%	Mean	Median	Mode	SD
6-8	5	1.6	10.037	10.000	10.000	1.367
8-10	135	45				
10-12	115	38.3				
12-14	45	14.9				

Table No.1depicts that Hb level gm/dl. Age showed that highest at 10.037±1.367 in the age group of 8-10 years of age.

Table No. 2:- Anaemia Status among adolescents. N=300

Gender	Mean	N	SD
Mild anaemia			
a) Male	11.914	50	0.584
b) Female	11.064	11	0.156
Moderate anaemia			
a) Male	9.744	85	0.605
b) Female	9.312	136	0.669
Severe anaemia			
a) Male	6.833	6	0.816
b) Female	6.833	6	0.816
Normal			
a) Male	13.183	12	0.312
b) Female	13.183	12	0.312

Table No.2 as per gender finding revealed that mild anaemia shows that the highest value 11.914 ± 0.584 found in the male followed by 11.064 ± 0.156 in female. As per the prevalence of anaemia among adolescent showed moderate anaemia was highest in male i.e. 9.744 ± 0.605 followed by 9.312 ± 0.669 were in female. In severe anaemia male and female 6.833±0.86. There were normal status of Hb among adolescents male and female 13.183±0.312.

Table No.3:- (a) Association of anaemia among adolescents with selected variables. N=300

Sr. No.	Variables	Anaemia level				df	X^2	p-value
		Normal (f)	Mild (f)	Moderate (f)	Severe (f)			
1.	**Age (In Years)**							
	a) 13-15	0	13	117	4	3	30.466	0.000*
	b) 16-18	12	48	104	2			
2.	**Gender**							
	a) Male	12	50	85	0	3	54.605	0.000*
	b) Female	0	11	136	6	3		
3	**Father's education Status**							
	a) Informal	1	10	72	3	15	35.328	0.002*
	b) Primary	0	15	55	1			
	c) Middle	0	5	18	0			
	d) Secondary	8	25	56	2			
	e) Sr. Secondary	2	5	20	0			
	f) Graduation	1	1	0	0			
4.	**Mother's Education status**							
	a) Informal	2	20	94	4	15	52.879	0.000*
	b) Primary	2	13	73	2			
	c) Middle	0	2	18	0			
	d) Secondary	4	23	27	0			
	e) Sr. Secondary	4	3	7	0			
	f) Graduation	0	0	2	0			
5.	**Family income (In Rs.)**							

	a) ≤5000	1	14	79	1	15	49.000	0.000*
	b) 5001-10000	7	31	120	5			
	c) 10001-15000	0	3	13	0			
	d) 15001-20000	0	5	4	0			
	e) >20000	4	8	5	0			
6.	**Dietary pattern**							
	a) Non-vegetarian	6	32	64	4	6	15.683	0.016*
	b) Vegetarian	6	28	153	6			
	c) Eggitarian	0	1	4	0			
7.	**Frequency of junk food**							
	a) Daily	3	5	7	0	6	20.474	0.002*
	b) Once a week	3	39	118	5			
	c) Twice a week	6	17	96	1			
8.	**Frequency of intake of fruits**							
	a) Daily	2	6	4	0	6	21.793	0.001*
	b) Alternately	4	12	34	3			
	c) Once a week	6	43	183	3			

NB. * Significant (p-value<0.05)

Table No.3 revealed the association of anaemia among adolescents with selected variables. The Pearson chi-square test was applied, here p-value is less than 0.05 so above table showed level of anaemia was significant association with selected variables.

Table No.3:- (b) Association of anaemia among adolescents with selected variables. N=300.

Sr. No.	Variables	Anaemia level				df	X^2	p-value
		Normal (f)	Mild (f)	Moderate (f)	Severe (f)			
1.	**Religion**							
	a) Hindu	0	1	1	0	6	3.677	0.720NS
	b) Sikh	12	60	213	6			
	c) Christian	0	0	7	0			
2.	**Types of family**							
	a) Nuclear	5	35	115	3	3	1.178	0.758 NS
	b) Joint	7	26	106	3			
3.	**Father's occupation**							
	a) Unemployed	0	0	1	0	15	19.375	0.197 NS
	b) Govt. Job	3	8	9	0			
	c) Pvt. Job	1	5	8	0			
	d) Farming	4	17	65	1			
	e) Businessman	0	0	1	0			
	f) Others	4	31	137	5			
4.	**Mother's occupation**							
	a) Govt. Job	1	1	5	0	12	5.526	0.938 NS
	b) Pvt. Job	0	1	7	0			
	c) Businesswoman	0	0	1	0			
	d) Housewife	11	57	194	6			
	e) Others	0	2	14	0			
5.	**Frequency of intake of green leafy vegetables**							
	a) Daily	4	13	50	0	6	8.556	0.200 NS
	b) Alternately	8	48	163	5			
	c) Once a week	0	0	8	1			
6	**History of chronic illness (In Years)**							
	a) 2	0	1	6	0	12	7.529	0.821 NS

	b) 3	1	0	3	0			
	c) 4	0	0	1	0			
	d) >4	0	1	1	0			
	e) No H/o of chronic illness	11	59	210	6			

NB: NS Not Significant (p-value >0.05)

Table No.3 (b) showed the association of anaemia among adolescents with selected variables. Pearson chi square test was applied, here p-value is more than 0.05 so above table showed level of anaemia was not significant association with selected variables.

Discussion:-

The present study has been done assess the prevalence rate of anaemia of adolescents. Here researcher included total 300 adolescents (147 male and 153 female) at selected rural communities, Amritsar. Here researcher used Sahil's method for hemoglobin as per WHO classification criteria.

Basu et al[5]in a study done in Govt. Schools of Chandigarh found the prevalence to be as high as 81.8% compared to our study in which the prevalence is 67%. The reason for comparative high prevalence may be because they have taken cutoff of iron deficiency as <15ng/ml. **Sharda Sindu**[6]in a study carried out among 265 adolescents girls of Amritsar; also found high prevalence 75% of anaemia including 12.83% girl who had severe anaemia.

In the present study researcher found prevalence rate as per different categories of anaemia like 73.7% moderate anaemia, 20.3% mild anaemia and only 2% severe anaemia in adolescents.

Anand et al[7]were reported prevalence of anaemia to be 27.8% in 12-14 years and 41.3% in 15-18 year age group of adolescent boys of school of rural in Delhi. But here in this study 49% were male and 51% were female adolescents. The study revealed that 44.7% in 13-15 years and 55.3% in 16-18 years age group.

Conclusion:-

The results of study revealed that the most of the adolescents had moderate anaemia and few had severe anaemia. Finding revealed that there was significant association between age, gender, education, father's education status, mother's education status, family income, dietary pattern, frequency of junk food, frequency of intakes of fruits. Here it can be inferred that there is a need for enhancement of knowledge of adolescents regarding healthy life style to prevent anaemia by means of pamphlets so as to improve and maintain the health status of adolescents and prevent the occurrence of anaemia.

References:-

1. Rebecca J. Stoltzfus, Michele L. Dreyfuss. Guidelines for the use of iron supplements to prevent and treat iron deficiency anemia.. Geneva: International nutritional anaemia consultative group/UNICEF/WHO: The Institute: 1998 [cited 2014 May 13]. Available from:

http://www.who.int/nutrition/publications/micronutrients/anaemia_iron_deficiency/1-57881-020-5/en/

2. Adolescent girls anaemia control programme available on http:/www. Unicef.org/India/14. The united nations children's fund (UNICEF),2011.
3. Gupta KV, Maria AK, Kumar R. Bahia JS, AroraS. Prevalence of anaemia in young males and females in rural Punjab. Journal of clinical and diagnostic research. 2011; October, Vol.5(5):1020-26.
4. Sudhagandhi B, Sundaresan S, Willium WE, Prema A. Prevalence of anaemia in the school children of Kattankulathur, Tamilnadu, India. Int J Nutr Pharmacol Neurol Dis. 2011[cited 2014 Apr 6];1(1):84-8. Avaliable from: http;/www.ijnpnd.com/text.asp?2011/1/2/184/84212.
5. Basu S, Hazarika R, Parmar V. Prevalence of anaemia among school going adolescents of Chandigarh. Indian Pediatrics. 2005;42:593-97.
6. Sindhu S, KUmari K, Uppal M. Prevalence of anaemia among adolescents girls of SC of Punjab. Nathropologists 2005;7(4):265-7.
7. Anand K, Kant S, Kapoor SK. Nutritional status of adolescent school children in rural north India. Indian Pediatrics. 1999;36(8):810-15.