Prevalence of Anaemia in Female Students of Pharmacy College and its Association with Various Socio-Demographic Variables: A Study Conducted in Rural Teaching Institute, Kasegaon

Ghorpade V V[1], Shinde P P[1], Madhekar N S[2], Pol V S[3]

ABSTRACT

Abstract: Nutritional anaemia though global in occurrence is more of concern in the developing countries because of the high prevalence in these regions. In India, this silent emergency is rampant among women belonging to reproductive age group (15-49 yrs). Objectives: 1. To estimate the prevalence of anaemia among girl students of rural Pharmacy College. 2. To find out any association between socio-demographic variables, dietary habits and menstrual history

Material and methods: A cross sectional institution based study was conducted in Rajarambapu Patil College of Pharmacy, Kasegaon from 15 Jan 2016 to 30 Jan 2016. In total 168 respondents participated. A pre designed and pretested self administered questionnaire interview method was used. Information on socio demographic factors, dietary habits and menstrual history was obtained. Data collected was analysed and interpreted with the help of percentage and chi square test.

Results: In present study only one fourth i.e.44 (26.19%) of study subjects had normal haemoglobin, while three fourth i.e. 124(73.81%) had one or other grade of anaemia. Among anaemics majority i.e. 70.23% contributed between mild to moderate category. Consumption of GLV & fruits, menorrhagia & passing clots during menses were significantly associated with anaemia prevalence.

Conclusion: Present study revealed high prevalence of anaemia in college going girls.

Keywords: Prevalence, Anaemia, Young female students.

INTRODUCTION

Nutritional anaemia is a worldwide problem with the highest prevalence in developing countries. It is found among women of child-bearing age, young children, during pregnancy and lactation.

Nutritional anaemia though global in occurrence is more of concern in the developing countries because of the high prevalence in these regions.[1] Anaemia is attributed to dietary inadequacy due to poor purchasing power, illiteracy, ignorance regarding nutritional value of available cheap food, cultural taboos, superstition, large families etc.

In India, this silent emergency is rampant among women belonging to reproductive age group (15-49 yrs).As per District Level Health Survey (DLHS 2002-2004) prevalence of anaemia in adolescent girls is very high (72.6%).[2] In adolescent girls, educational or economic status does not seem to make much of a difference in terms of prevalence of anaemia. Prevention, detection or management of anaemia in adolescent girls has till now not received much attention.

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 e.g. in women loss of considerable amount of iron during menstruation.

Iron deficiency anaemia in adolescent girls is significant risk factor for maternal mortality, high incidence of low birth weight babies, high perinatal mortality and fetal wastage, which ultimately results in higher fertility.[3] It can even cause lack of concentration, irritability and impair academic performance of students.

Adolescence, a period of transition between childhood and adulthood, occupies crucial position in the life of human being.[4] It is considered as most appropriate time to intervene. Behaviour change messages embarrassed by this group can contribute to sustained health impact.

So the present study was planned to ascertain the prevalence of anaemia and its association with various factors among young female students of Pharmacy College and to suggest intervention strategies.

Aims and objectives

To estimate the prevalence of anaemia among female students of rural Pharmacy College.

To find out any association between socio-demographic variables, dietary habits and menstrual patterns with prevalence of anaemia among female students of rural Pharmacy College.

MATERIAL AND METHOD

The present cross sectional institution based study was carried out in Kasegaon Education Society's "Rajarambapu Patil Pharmacy College, Kasegaon" Tal- Walwa, Dist- Sangli.(M.S.). Total strength of Boys and Girls students was 352, out of which 194 were girls forming universal sample. Out of 194 girl students 168 participated in present study. Inclusion criterion – those who were present and willing to participate in study, informing about 1cc blood collection by prick. Exclusion criterion: those who were not willing to participate in study. The study period was from 15 January 2016 to 30 January 2016. Written consent was obtained from The Head of Institution and purpose of study was explained to him. Ethical clearance was taken from Institutional Ethical Committee, IMSR Mayani. A pre designed and pretested self administered questionnaire interview method was used after obtaining informed consent of students. Information on

[1]Associate Professor, [2]Professor and HOD, [3]Statistician, Department of Com. Medicine, IMSR Mayani, India

Corresponding author: 1Associate Professor, Department of Com. Medicine, IMSR Mayani, India

How to cite this article: Ghorpade V V, Shinde P P, Madhekar N S, Pol V S. Prevalence of anaemia in female students of pharmacy college and its association with various socio-demographic variables: a study conducted in rural teaching institute, Kasegaon. International Journal of Contemporary Medical Research 2016;3(8):2295-2297.

socio demographic factors, dietary habits and menstrual history was obtained. Haemoglobin was measured by experienced laboratory technician using Sahli's method. Privacy of data was strictly maintained to protect physical, mental and social integrity of participants. The standards set by the WHO used to detect anaemia were used.

STATISTICAL ANALYSIS

Collected data was analysed and interpreted using Chi-square test with the help of SPSS version 21. p value of < 0.05 was considered to indicate statistical significance.

In present study, majority i.e. (70.60%) belonged to age group between 20 years to 22 years. About half participants in this study (59.53%) belonged to middle socio-economic group. Percentage of participants staying at home was slightly more (by 13.09%) than percentage of participants staying at hostel (table-1).

In present study only one fourth 44 (26.19%) of study subjects had normal haemoglobin level, while three fourth 124(73.81%) had one or other kind of anaemia. Out of anaemics, 118 (95.16%) contributed for mild & moderate anaemia together (table-2).

Prevalence of anaemia among vegetarian & consuming mixed type of diet were 75.68% & 72.34% respectively. 93 (90.29%) and 108(84.38%) girls were anaemic who do not consume green leafy vegetables and fruits regularly respectively. Most significant associations in present study was found between anaemia and not regular consumption of fruits and green leafy vegetables daily (p<0.001). No significant association was found between anaemia and habits of regular breakfast, doing fast & type of diet (table-3).

Study subjects in present study showed significant association (p<0.001) between anaemia with duration of menstrual flow >5 days & passing clots in menstrual flow, while age at menarche & irregularity of menstrual cycle showed no association. 85(91.4%) & 78(85.71%) study subjects were having menstrual flow for more than 5 days & h/o passing clots during menstruation respectively (table-4).

DISCUSSION

According to WHO, if the prevalence of anaemia is more than 40% it is considered as problem of high magnitude.[5] Present study highlights the fact that the problem of anaemia is far wider than expected among females especially from rural settings and needs immediate attention.

In present study Table-2 shows that only 44 (26.19%) participants were with normal haemoglobin level that is >12 gm/dl. While 124(73.81%) participants had one or other form of anaemia. The findings are comparable with 62.63%, 76% and 75% girls with one or other form of anaemia in studies done by Arun V Panant et al[6], Satha A et al[7] and Sharda Sindhu et al[8] respectively. In present study mild, moderate and severe anaemia were found in 57(33.93%), 61 (36.31%) and 6 (3.37%) respondents respectively. Findings slightly differ from results mentioned by Kamal Mehta[9], who found prevalence of mild, moderate and severe anaemia in 46.67%, 19.16% and 0.83% respectively and Sartha A et al[7] who found mild, moderate and severe anaemia in 56.67%, 19.33% and 0% respectively.

Table-3 shows that, as far as diet concerned, in present study no statistical significance was associated between dietary pattern (veg. or mixed) and practice of fast with prevalence of anaemia. However significant statistical association (p< 0.0001) was found between non consumption of GLV and fruits with prevalence of anaemia. Similar findings were mentioned by Sartha A et al[7] and Kaur M et al.[10]

Regarding menstrual history, in present study, Table-4 shows that duration of menstrual flow > 5 days and history of passing clots during menstruation had significant association with prevalence of anaemia (p< 0.001), while no significant association was found between age of menarche and regularity of menses with prevalence of anaemia. Manjula VD et al[11] also mentioned significant association between menstrual flow more than 5 days and passing of clots during menstruation and anaemia while Sartha A et al[7] found no association between above variables.

CONCLUSION

Prevalence of anaemia and its severity is influenced by several independent but overlapping factors. Lack of proper diet and excessive blood loss during menstruation are major contributory factors for anaemia in females. In present study only 26.19% participants had normal haemoglobin levels on the contrary 73.81% had anaemia. Majority of anaemics, i.e. 90.29% &

Variable	Frequency	Percentage
Age group (in years) n= 168		
19	33	19.64
20	42	20.00
21	48	28.57
22	37	22.03
23	8	04.76
Socio-economic status* n= 168		
Upper(I)	48	28.57
Upper middle (II)	72	42.86
Lower middle (III)	28	16.67
Upper lower (VI)	12	07.14
Lower lower (V)	8	04.76
Residential status		
Hostel	73	43.45
Home	95	56.54
Type of family		
Joint	93	55.36
Nuclear	75	44.64
*Socio-economic classification as suggested by B G Prasad and modified; as per The All India Consumer price index (AICPL) of May 2014.		

Table-1: Distribution of study subjects according to Socio-demographic variables

Grade of Anaemia	No of girls (%)
Non-anaemic (Hb >12gm/dl)	44 (26.19)
Grade I – Mild Anaemia (Hb 10.0 to 11.9 gm/dl)	57 (33.93)
Grade II- Moderate Anaemia (Hb 7.0 to 9.9 gm/dl)	61 (36.31)
Grade III – Severe Anaemia (Hb <7 gm/dl)	6 (3.57)

Table-2 – Prevalence of anaemia as per grades in study subjects (n=168)

Indicators	Anaemic n = 124	Non-anaemic n = 44	Total N= 168	p value
Diet type				
Vegetarian	56 (75.68%)	18 (24.32%)	74	p> 0.05
Mixed	68 (72.34%)	26 (27.66%)	94	
Regular Breakfast				
Yes	41 (66.12%)	21 (33.87%)	62	p> 0.05
No	83 (78.30%)	23 (21.70%)	106	
Consuming GLV regularly				
Yes	31 (77.69%)	34 (52.31%)	65	p<0.001
No	93 (90.29%)	10 (09.71%)	103	
Consuming Fruits daily				
Yes	16 (40%)	24 (60%)	40	p<0.001
No	108(84.38%)	20 (15.62%)	128	
Practising fast				
Yes	51 (70.84%)	21 (29.16%)	72	p>0.05
No	73 (76.05%)	23 (23.95%)	96	

Table-3: Association between Anaemia and Certain Diet habits in study subjects

Indicators	Anaemic n = 124	Non anaemic n = 44	Total n= 168	p value
Regular menses				
Yes	82 (76.64%)	25 (23.36%)	107	p>0.05
No	42 (68.855)	19 931.15%	61	
Duration of menstrual flow				
≤ 5 days	39 (52.00%)	36 (48.00%)	75	p<0.001
> 5 days	85 (91.40%)	08 (08.605)	93	
H/o passing clots				
Yes	78 (85.71%)	13 (14.29%)	91	p<0.001
No	46 (59.74%)	31 (40.26%)	77	
Age of menarche				
<14 years	32 (80.00%)	08 (20.00%)	40	p>0.05
14-16 years	88 (72.73%)	33 (27.27%)	121	
>16 years	04 (57.14%)	03 (42.86%)	07	

Table-4: Association between anaemia and menstrual patterns in study subjects

83.10% had unhealthy diet preferences like non consumption of GLV & fruits respectively even though belonged to rural settings where these are freshly available.

RECOMANDATIONS

Need to include iron rich food in diet of girls.

Efficient utilization of government programmes like ICDS, Nutrition programme for underweight adolescent girls, Kishori shakti yojana, Weekly iron folic acid supplementation for adolescent girls.

Health education, seminars on menstrual hygiene should be conducted at regular intervals.

REFERENCES –

1. Basu S, Hajarika R and Parmar V. Prevalence of anaemia among school going adolescence of Chandigarh. Indian pediatrics. 2007;42:593-99.
2. K Park, Park's Textbook of Preventive and social Medicine; 22nd edition, M/s Banarsidas Bhanot Publishers. 2013: p-595.
3. WHO Iron deficiency anaemia. Assessment, Prevention and Control; A guide for programme managers. UNICEF, United Nations, WHO;2001
4. Anand k, Kant S, Koopur SK. Nutritional status of adolescent school children in rural North India. Journal of association of Physicians of India. 2004;52:18-20.
5. Sheshadri S, Gopaldas T. Impact of Iron supplementation of cognitive functions in Pre-school and school age children. The Indian experience. Am. J. Clin. Nutr. 1989; 50:675-686.
6. Arun V Panant, Sambhaji A Pathare, Shaikh Asawa, Ganghadhar V Rohokale. Iron deficiency among rural college girls; A result of poor nutrition and prolonged menstruation. Journal of community nutrition and health. 2013;2:78-80.
7. Sartha A, Singh Z, Boratne AV, Dutta SS, Senthilvel V, Joice S. Prevalence of anaemia among young adult female students in a medical teaching Institution in Pondicherry. Indian Journal of Maternal and Child Health. 2010;12:67-70.
8. Sindhu S, Kumari K, Uppal M. Prevalence of anaemia among adolescent girls of SC of Punjab. Anthropologist. 2005;7:265-7.
9. Kamal Mehta. Prevalence of nutritional anaemia among college students and its correlation with body mass index. IJSR. 2015;4:1882-86.
10. Kaur M, Singh K. Effect of health education on knowledge, attitude and practises about anaemia among rural women in Chandigarh. Indian J Community Med. 2001;26:128.
11. Manjula V D, P Parameshwari, Lillykutty Pothen, Sobha A. Prevalence of anaemia among female undergraduate students of Govt. Medical College, Kottayam, Kerala. Indian J Med Health Sci. 2014;3:133-138.

Source of Support: Nil; **Conflict of Interest:** None

Submitted: 24-06-2016; **Published online**: 25-07-2016