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Effectiveness of Nutritional Supplement on Haemoglobin Level among Adolescent Girls Residing in Selected Communities

Swati Deepak Bhare

MSc Nursing, Staff Nurse, Maharashtra, India

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Corresponding Author: Swati Deepak Bhare

Abstract

Effectiveness of nutritional supplement on haemoglobin level among adolescent girls residing in selected communities.

Objectives:

1. To assess the level of hemoglobin among adolescent girls residing in selected communities.
2. To assess the effect of nutritional supplement on hemoglobin level among adolescent girls residing in selected communities.
3. To find out the association between study findings with selected demographic variables.

Material and Methods: The research approach adopted for the present study was quantitative research approach. This study aims Effectiveness of nutritional supplement on hemoglobin level among adolescent girls residing in selected areas of community. The sample size was adopted for the study is 60 samples by convenient sampling techniques. The study proceeded after the sanction by institutional ethical committee and permission was adopted from the selected hospitals of city. Informed consent was taken from all the participants and confidentiality and anonymity was maintained throughout the process.

Tool used for the study was divided under sections including

Section I: Consent form from samples

Section-II:

Analysis related to the level of hemoglobin among experimental & control adolescent girls residing in selected communities.

Section III:

Analysis related to the effect of nutritional supplement on hemoglobin level among adolescent girls residing in selected communities.

Section-IV:

Analysis related to association between study findings with selected demographic variables.

Section II:

1. **Age:** In demographic data according to their age profile of adolescent girls according to age majority 53.33% from the age group of 17 years were as 26.67% are from the age group of 18 years, 20% are from the age group of 19 years.

2. **Religion:** demographic profile of adolescent's girl according to religion status. In that majority 33.33% of girl are Muslim, whereas 26.67% are Hindu, 20% are Christian and on 20% from other religion.
3. **Monthly income of the family:** demographic profile of adolescent's girl according to income status. majority 33.33 of girls had monthly income of Rs.10, 000 and below, followed by significant percentage 26% had Rs. Rs.10,001 – Rs.20,000, wherein 26% had Rs.20,001- Rs.30, 000 and 13.33% had Rs.30, 001 and above.
4. **Place of living:** demographic profile of adolescent's girl according to place of living. In that majority of 56.67% girls living in hostel and 43.33% are living at home.
5. **Type of Diet:** demographic profile of adolescent's girl according to diet. In that majority of 56.67% girls are vegetarian and 43.33% are non-vegetarian.
6. **Type of family:** demographic profile of adolescent's girl according to type of family. In that majority of 53.33% girls living in joint family and 46.67% are in nuclear family.
7. **Occupation of parent:** demographic profile of adolescent's girl according to occupation. In that majority that 43.33% having self-business, 26.67 are government servant, 16.67 are private servant and 13.33% are farmer.
8. **Previous treatment of anaemia:** demographic profile of adolescent's girl according to previous treatment of anaemia. In that majority 53.33 are taken treatment of anaemia and 46.67% are did not taking treatment of anaemia.
9. **Duration of Menstrual days:** demographic profile of adolescent's girl according to Duration of Menstrual days. in that majority of 40 % duration is 4-5 days, 30% duration is 2-3 days and 30% duration is >5 days.
10. **Menstrual flow:** Demographic profile of adolescent's girl according to menstrual flow. in that majority of 40% having heavy flow, 33.33% having moderate flow and 26.67% having scarcity.

Keywords: Nutritional Supplement, Haemoglobin, Adolescent Girls, Communities

Introduction

Adolescence, a period of transition between childhood and adulthood, occupies a crucial position in the life of human beings. This period is characterized by an exceptionally rapid rate of growth. Adolescents (both boys and girls) are at risk of developing iron deficiency and iron deficiency anaemia because of the increased iron requirements for growth.

Inadequate nutritional intake during adolescence can have serious consequences throughout the reproductive years and beyond. Poor nutrition during adolescence can impair the work capacity and productivity of adolescent boys and girls in their later years. Further, an undernourished girl is at the risk of developing complications during pregnancy and the chances of her giving birth to a low-birth-weight baby increases, thus perpetuating a vicious cycle of malnutrition and ill-health^[1].

In India, 40 per cent of girls and 18 per cent of boys are anaemic. Anaemia among adolescents adversely affects growth, resistance to infections, cognitive development and work productivity.

UNICEF India has been the partner of choice in supporting the universal roll-out of the Weekly Iron and Folic Acid Supplementation Programme in 14 major states in India, which jointly are home to 88 per cent of India’s adolescent girls. The focus areas are convergent planning and development implementation protocols, development of training tools, capacity-building of field workers, developing external field monitoring and feedback loop review mechanisms and developing communication strategies and materials for mass awareness^[5].

Review of Literature

Ms. Pabalpreet Kaur (2020) conducted study on Anemia among Adolescent girls in India: A review of all published literature related to prevalence of anemia for a period of 9 years (2011-2019) in India was carried out. The online database MEDLINE, Science direct, Pubmed, Google scholar was used to identify relevant studies. Data from studies meeting inclusion/exclusion criteria were abstracted. After assessing the quality of the full texts of potentially 35 relevant studies, 15 studies with a total of 5,691 adolescent girls were included in the review. The review included Descriptive and cross-sectional studies from different states of India. In all studies, prevalence estimated anemia ranged from 21% to 90%. In terms of severity of anemia mild anemia ranges from 18.4% to 73.3% and moderate and severe anemia 19.% to 55.35%, 0.43% to 15.6% respectively. The available evidence suggests that anemia contributes substantially to the health of adolescent girls even today. Present review found that prevalence of anemia in India is still persisting. The review showed that anemia results from inadequate intake of iron in diet, worm infestation, low BMI, not taking Iron and folic acid tablets, low-socioeconomic.

YanDeivita (2021) conducted study on Overview of Anemia; risk factors and solution offering. Using literature studies. Article searches using online data-based Science Direct, PubMed, and Google Scholar from 2019 to 2021. They have obtained as many as 20 articles based on inclusion criteria and relevance. Anaemia in young women is still a severe problem among the community. There need to be early detection measures to quickly determine the incidence of anemia and describe anemia as one of the information for all circles young women. Women have a higher risk of anemia, especially young women. This is due to strict dietary habits to prevent weight gain, resulting in malnutrition due to the unmet intake of essential nutrients for the body. Whereas in adolescence, there is an increase in iron demand due to growth and menstruation. Therefore, it is very important to provide smart solutions to the incidence

of anemia. One that is offered is early detection so that prevention can be done. The use of information technology can be used to conduct early detection of anemia in adolescents because it has been widely utilized among the community, especially adolescents.

Presentation and Organization of Data

Obtained data were organized in 4 sections-

Section I:

Analysis of data related to demographic variables under study.

Section II:

Analysis related to the level of hemoglobin among experimental & control adolescent girls residing in selected communities.

Section III:

Analysis related to the effect of nutritional supplement on hemoglobin level among adolescent girls residing in selected communities.

Section IV:

Analysis related to association between study findings with selected demographic variables.

Section I:

Analysis of data related to demographic variables under study.

S. No	Demographic variables	Frequency	%
1.	Age in years:		
	a.17	16	53.33
	b.18	8	26.67
	c.19	6	20.00

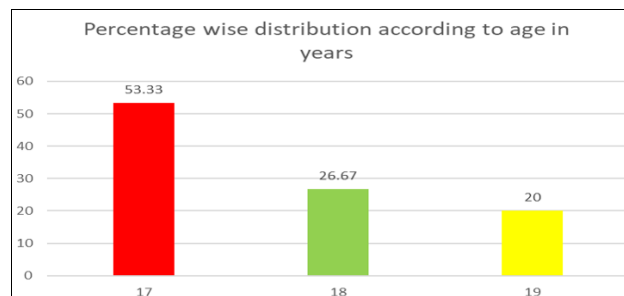


Fig 1: Percentage wise distribution according to age in years

2.	Religion:		
	a- Hindu	8	26.67
	b- Muslim	10	33.33
	c- Christian	6	20.00
	d- Others	6	20.00

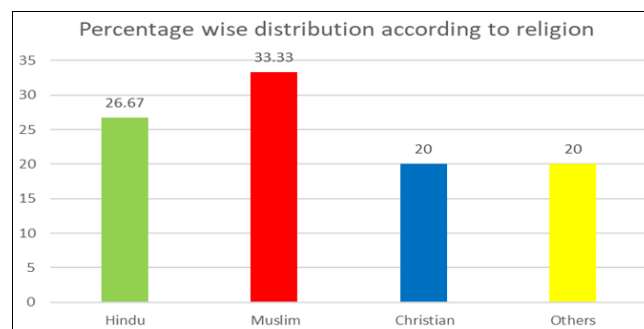


Fig 2: Percentage wise distribution according to religion

3.	Monthly income of the family		
	a- Rs.10, 000 and below	10	33.33
	b- Rs.10,001 – Rs.20,000	8	26.67
	c- Rs.20,001- Rs.30, 000	8	26.67
	d- Rs.30, 001 and above	4	13.33

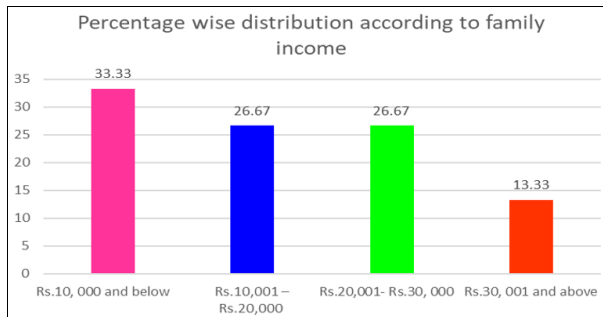


Fig 3: Percentage wise distribution according to family income

4.	Place of living:		
	a- Hostel	17	56.67
	b- Home	13	43.33

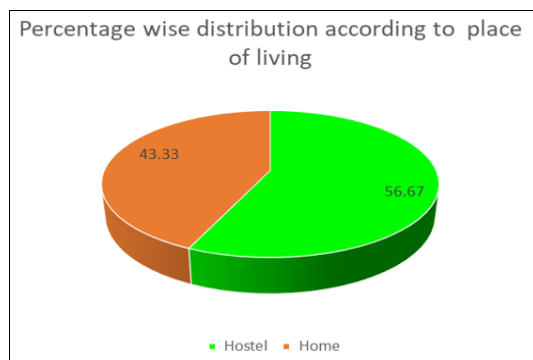


Fig 4: Percentage wise distribution according to place of living

5.	Type of Diet		
	a- Vegetarian	17	56.67
	b- Non-vegetarian	13	43.33

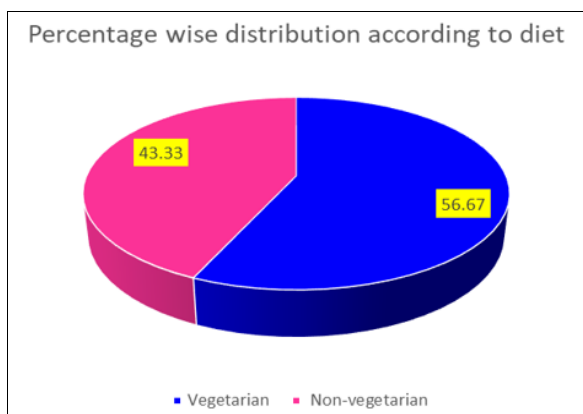


Fig 5: Percentage wise distribution according to diet

6.	Type of family		
	a- Joint Family	14	46.67
	b- Nuclear family	16	53.33

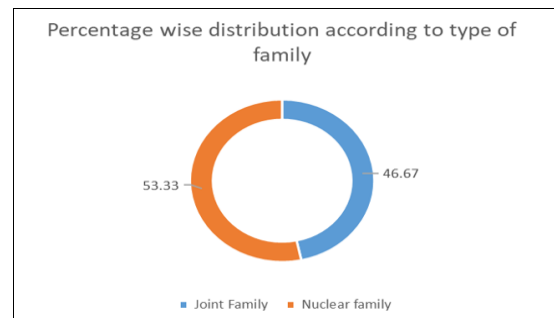


Fig 6: Percentage wise distribution according to type of family

7.	Occupation of parent		
	a- Self-business	13	43.33
	b- Government servant	8	26.67
	c- Private servant	5	16.67
	d- Farmer	4	13.33

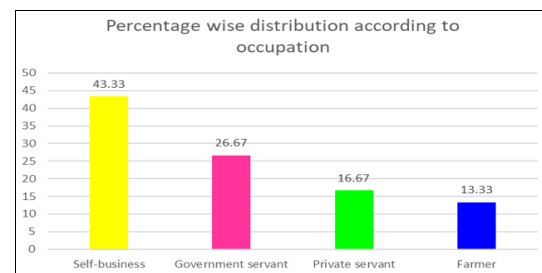


Fig 7: Percentage wise distribution according to occupation

8.	Previous treatment of anaemia		
	a- Yes	16	53.33
	b- No	14	46.67

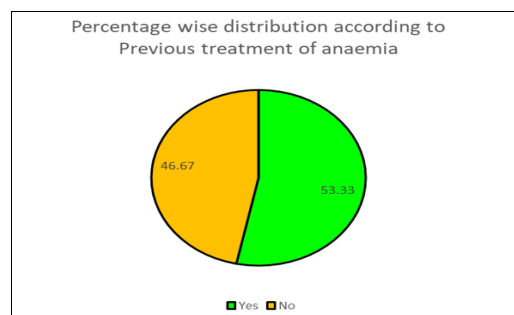


Fig 8: Percentage wise distribution according to previous treatment of anaemia

9.	Duration of Menstrual days		
	a- 2-3 days	9	30.00
	b- 4-5days	12	40.00
	c- >5 days	9	30.00

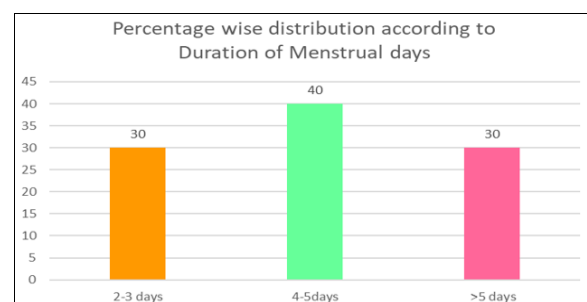


Fig 9: Percentage wise distribution according to duration of menstrual days

10.	Menstrual flow		
	a- Heavy	12	40.00
	b- Moderate	10	33.33
	c- Scarcity	8	26.67

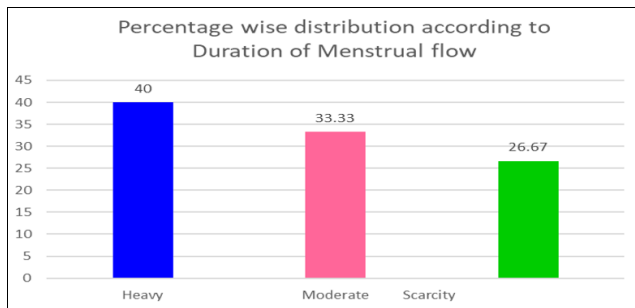


Fig 10: Percentage wise distribution according to duration of menstrual flow

Section III:

Analysis related to the level of hemoglobin among experimental & control adolescent girls residing in selected communities.

N=30

Group	Mild	Moderate	Severe	Mean	SD
Control pre test	2 (6.67%)	11 (36.67)	17 (56.67%)	7.06	0.88
Experimental pre test	2 (6.67%)	11 (36.67)	17 (56.67%)	7.09	0.85

Table 2: Analysis of association between level of haemoglobin in demo experimental and demographic data in girls

N=30

Demographic variables	Mild	Moderate	Poor	DF	Chi square table value	Chi square Calculated Value	P value	Remark
Age in years:								
a. 17	0	6	5	4	9.48	3.29	0.5	No Association
b. 18	1	2	8					
c. 19	1	3	4					
Religion:								
a- Hindu	1	4	4	6	12.59	4.06	0.66	No Association
b- Muslim	0	1	6					
c- Christian	0	4	4					
d- Others	1	2	3					
Monthly income of the family								
a- Rs.10, 000 and below	0	3	8	6	12.59	4.22	0.64	No Association
b- Rs.10,001 – Rs.20,000	1	4	5					
c- Rs.20,001- Rs.30, 000	0	3	2					
d- Rs.30, 001 and above	1	1	2					
Place of living:								
a- Hostel	1	7	8	2	5.99	0.74	.68	No Association
b- Home	1	4	9					
Type of Diet								
a- Vegetarian	1	5	10	2	5.99	0.48	0.78	No Association
b- Non-vegetaria	1	6	7					
Type of family								
a- Joint Family	2	3	9	2	5.99	3.15	0.2	No Association
b- Nuclear family	0	8	8					
Occupation of pa								
a- Self-business	0	4	10	6	12.59	7.23	0.3	No Association
b- Government servant	0	1	3					
c- Private servan	2	4	2					
d- Farmer	0	2	2					

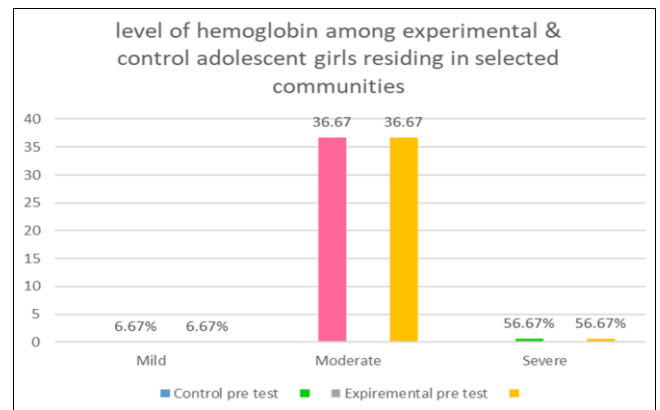


Fig 11: Level of hemoglobin among experimental & control adolescent girls residing in selected communities

Section IV

Analysis related to the effect of nutritional supplement on hemoglobin level among adolescent girls residing in selected communities.

N=30

Group	Mean	SD	T- value	P- Value	Remark
Control Post test	7.03	1.04	-10.3	0.0001	Significant
Experimental Post test	11.98	2.25			

Section V

References

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