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Prevalence, Determinants of Anemia and its Impact on Quality of Life Among Adolescent Girls- A Descriptive Study

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***Abstract*: Adolescence is the phase of life between childhood and adulthood, from ages 10 to 19. It is a unique stage of human development and an important time for laying the foundations of good health. Anemia is a critical public health problem in India that affects women and children throughout the lifecycle. Anemia in girls during pregnancy is associated with premature births, low birth weight, and peri-natal and maternal mortality. Adolescence is an opportune time for interventions to address anemia, as it is an important time of growth and development. *Objectives*-To assess the prevalence, determinants and the impact of anemia on quality of life among adolescent girls. Material and methods-A descriptive study was conducted among 60 adolescent girls of selected college of Durg, Chhattisgarh in December 2021.Girls were selected by purposive sampling technique. Information regarding socio-demographic, prevalence and determinants was recorded in pre-designed, pre -tested questionnaire, observation checklist and impact of anemia on quality of life was assessed by WHO QOL BREF Scale. Hemoglobin estimation was done by Sahli's haemoglobinometer and anthropometric measurement was also examined. Data was analyzed by frequency, percentage, mean, standard deviation. *Results:* Anemia (Hb <12 g dl were prevalent in (70%) of the study sample. Out of 60 samples in the study population42 (70%) girls were having moderate anemia, 4(6.7%) were mild anemic and 14(23.3%) were non anemic. Pallor in palmer surface and tongue were present in30 (50%) girls, 34(56%) were having angular stomatitis, 42(70%) girls faced leg cramps and28 (46.7%) have thinning of hair. Weakness, irritability, fatigue, headache, palpitations and loss of appetite were reported in 83.3%, 80% and 70%, respectively. About 36(60%) girls have poor concentration while doing any activities. The data regarding determinants which revealed that 44(73.3%) girls belonged to middle class, 26(43.3%) of them were facing dysmenorrhea during menstrual cycle, 32(53.3%) of them attained menarche at the age of 15-16yr, 73.3% have regular cycle, with 24(40%) have heavy flow. All the girls 60(100%) have good sanitation facilities at home and only 16(26.7%) have habit of exercising daily and experience excessive sweating at the time of exercise. Out of 60 samples, a majority 40(66.7%) of them were found to be with good quality of life, 12(20.0%) were found to be with average quality of life, 6(10.0%) with very good quality of life and a meager 2(3.3%) was with poor quality of life. Conclusions-In present study majority adolescent girls are suffering from moderate level of anemia with many symptoms. Nutrition education along with nutritional supplementation and iron folic acid tablets should be provided to all girls. Awareness regarding prophylactic measures of anemia to be given to especially adolescent girls in order to prevent complications in future and prepare them for healthy reproductive life.**

***Keywords*: Anemia, adolescent, determinants, impact.**

1. Introduction

Adolescence in girls has been recognized a special period of transition from girlhood to womanhood. Adolescent girls constitute one fifth of the female population in the world. Adolescence has been considered as a critical window and a gateway to address the intergenerational cycle of malnutrition as adolescent girls enter pregnancy with poor nutritional reserve and give birth to undernourished babies. Nearly 1.2 billion of the global population is comprised of adolescents 90% of which live in low or middle-income countries. Anemia is a nutritional disorder resulting when the number and size of red blood cells or the hemoglobin concentration falls below the established cut-off value, which consequently impairs the capacity of the blood to transport oxygen to the body. It is a global public health problem affecting both developing and developed countries with its varied adverse consequences on health as well as on the socio- economic development of the countries . The most common cause of anemia worldwide is iron deficiency, resulting from prolonged negative iron balance, caused by inadequate dietary iron intake or absorption, increased needs for iron during pregnancy or growth periods, and increased iron losses as a result of menstruation and helminthic (intestinal worms) infestation. Other important causes of anemia worldwide include infections, other nutritional deficiencies (especially folate and vitamins B12, A and C) and genetic conditions (including sickle cell disease, thalassemia – an inherited blood disorder – and chronic inflammation) and severe malaria and may be associated with secondary bacterial infection. Adolescent girls are the vulnerable group to anemia because of increased iron requirements to support their rapid growth and mental development and replenish loss due to menstruation.

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Anemia among adolescent girls in future attributes to high maternal mortality rate, high incidence of low-birth-weight babies, high perinatal mortality and fetal death. So, the present study was conducted to find out prevalence of anemia in selected college of Durg, Chhattisgarh and to study some of the determinants and impact on quality of life.

2. Material and Method

After obtaining permission from Principal of selected institution, college based cross-sectional study was conducted in December 2021 for one month among adolescent girls aged 17 to 19 years. Durg, the study area, is located 40 km away from Raipur which is the capital city of Chhattisgarh. A total of 60 adolescent girls were attending selected college of Nursing in the town. After getting informed consent, information regarding prevalence, determinants and impact on quality of life was recorded in pre-designed, pre tested questionnaire, observation checklist, dietary diversity score, kuppuswamy scale for socio economic status and WHO QOL BREF Scale. The adolescent girls were collected in classroom for hemoglobin estimation. Due to feasibility and cost effectiveness hemoglobin estimation was done by Sahli's haemoglobinometer. For interpretation of anemia, cut off point for Hemoglobin % was taken as Mild anemia (11.0-11.9 mg/dl) Moderate anemia (8.0-10.9 mg/dl) and Severe anemia (<8.0 mg/dl). Statistical analysis was done by frequency, percentage mean, and standard deviation.

3. Results

1) Prevalence of anemia

The findings state prevalence of anemia which shows that out of 60 samples in the study population 42 (70%) girls were having moderate anemia,4(6.7%) was mild aneamic and 14(23.3%) were non aneamic. Pallor in palmer surface and tongue were present in30 (50%) girls, 34(56%) were having angular stomatitis, 42(70%) girls faced leg cramps and28 (46.7%) have thinning of hair. Weakness, irritability, fatigue, headache, palpitations and loss of appetite were reported in 83.3%, 80% and 70%, respectively. About 36(60%) girls have poor concentration while doing any activities.

2) Determinants of anaemia

Determinants of anaemia of adolescent girls revealed that 44(73.3%) girls belonged to middle class, 26(43.3%) of them were facing dysmenorrhoea during menstrual cycle, 32(53.3%) of them attained menarche at the age of 15-16yr, 73.3% have regular cycle, with 24(40%) have heavy flow. All the girls 60(100%) have good sanitation facilities at home and only 16(26.7%) have habit of exercising daily and experience excessive sweating at the time of exercise. Dietary diversity as a determinant of anaemia of adolescent girls depicts that majority of adolescent girls 60 (100%) were taking green leafy vegetables, sweets and junk fatty foods, about 58(96.7%) take vit A rich fruits, cereals and legumes, nuts, spices and beverages etc. very few girls take fish and organ meat i.e. 18(30%),22(36.7%) respectively.

3) Impact of anemia on quality of life of adolescent girls

The findings portray the frequency and percentage of adolescent's girls according to level of quality of life. Out of 60 samples, a majority 40(66.7%) of them were found to be with good quality of life, 12(20.0%) were found to be with average quality of life, 6(10.0%) with very good quality of life and a meager 2(3.3%) was with poor quality of life. The range, mean, SD and mean % of quality-of-life scores over the dimensions. The overall scores ranging within30-72 with mean of 55.17 and SD of 8.49.out of the maximum score of 80. The mean score percentage was 68.9%. It was also found over the domains, The mean percentage of social relationship was 85.0%, followed by the psychological aspect was 70.2%, physical aspect was 68.0%, environment aspect was 62.9% and the general aspect was 61.4%

Table 1
Prevalence of Anemia

S.no	**Hb level**	**No.**	**%**	
	Normal	14	23.3	
	Mild anemia	4	6.7	
	Moderate anemia	42	70.0	
	Severe anemia	0	0	
Sno	Hb estimation	Range	Mean	SD
1		9.4-12.5	10.72	1.01

Table 2
Impact on quality of life

S no	**Quality of life (16 items, Max. score=80)**	**Adolescents' girls**	
		Frequency	**Percentage**
1	Poor (16-32)	2	3.3
2	Average (33-48)	12	20.0
3	Good (49-64)	40	66.7
4	Very good (65-80)	6	10.0
	Over all	60	100

4. Discussion

In present study the prevalence of anemia among adolescent girls out of 60 samples in the study population 42 (70%) girls were having moderate anemia,4(6.7%) was mild anemic and 14(23.3%) were non aneamic. Shweta R. Chapparbandi et al conducted a cross sectional study in Bangalore found that majority of adolescent girls 176 (55.35%) were moderately anemic, followed by 15 (4.72%) were having severe anemia, 13 (4.09%) were having mild anemia. Meenal Vine Kultarr conducted a similar study to assess the prevalence of anemia among adolescent girls of urban slum of Nagpur and found to be very high (90.1%) among adolescent girls. Majority of the girls were having mild or moderate anemia (88.6%). Nazneen Habib conducted study in Jammu and Kashmir revealed that the prevalence of anemia among adolescent girls is 47.9%, of which 47.7% have mild anemia, 51.7% have moderate anemia, and 5.7% have severe anemia, which reveals that anemia is a severe public health problem among adolescent girls in the study area.

5. Conclusion

There is an urgent need to develop interventional programmes in these areas in the form of nutritional supplementation along with prophylaxis of iron-folic acid

tablets for prevention of anemia. Regular nutritional education sessions should be carried out to increase awareness in adolescent girls regarding anemia.

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