A Descriptive Study To Estimate The Haemoglobin Levels Among Adolescent Girls Of Government Girls Higher Secondary School Nawakadal Srinagar

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ABSTRACT:

Anemia is a widespread global health problem affecting people in both developed and developing countries with bad consequences on human health as well as social and economic development. It occurs at all stages of life cycle, but is more prevalent in pregnant women and young adolescent girls. According to WHO (2019) the global prevalence of anemia was 29.6% in non- pregnant women of reproductive age and 36.5% in pregnant women. According to the National health mission, there are 253 million adolescents aged 10 to 19 in India , and 47% of them are adolescent girls. Around 200 million adolescents (45%globally) with anemia live in India and China, and youg girls are at high risk . India has a higher incidence of anemia, with six out of ten girls being anaemic. According to NFHS-4 & NFHS-5 the prevalence of anemia among adolescent girls with age groups (15-19) years, in Jammu & Kashmir was 29.5% and 53.5% respectively.The necessity of this study is to assess the prevalence of anemia among the most vulnerable age group i.e adolescent girls age group who constitute a good percentage of the total anaemic population. Descriptive study was conducted on 30 adolescent girls of Governmentt Girls Higher Secondary School Nawa Kadal Srinagar using systematic random sampling technique. The time period of study was 4 weeks, data was collected using hemoglobinometer. The data was analyzed and proportions were calculated for all the variables. Chi- square test was used to find out the association between hemoglobin levels and selected demographic variables. P value of less than 0.05 was considered statistically significant. Out of the 30 adolescent girls, 8 (26.67%) adolescent girls had normal haemoglobin level ,13 (43.33%) had mild anaemia , 8 (26.67%) had moderate anaemia, 1 (3.33%) had severe anaemia. The result showed that 22 (73.33%) of adolescent girls had anaemia while 8 (26.67%) of adolescent had normal haemoglobin concentration. There is significant association between anaemia with variables like age , socio-economic status, religion, type of family and education of mother .

Key words:
Estimate, Hemoglobin, Adolescent girls

INTRODUCTION

Anemia is a blood disorder in which the number of red blood cells or hemoglobin concentration within the red blood cells is below normal which subsequently results in the decreased oxygen-carrying capacity of blood[1]. Hemoglobin is an iron- containing protein in the red blood cells (RBC) that transports oxygen from the lungs to the tissues and carries carbon dioxide from tissue back to lungs .The amount of hemoglobin in whole blood is expressed in grams per deciliter (g/dl)[2].

Anemia is defined as a hemoglobin concentration below a specified cut-off point which depends on Individual's age, gender, physiological status, smoking habits etc.The WHO defines anemia in pregnant women as a hemoglobin concentration<11.00g/dl and anemia in non-pregnant women as a hemoglobin concentration <12.0g/dl[2].

Adolescent girls are young people between the ages of 10 and 19 years. This is the formative period of life when the maximum amount of physical, psychological & behavioral changes takes place. More than 1.2 billion adolescents are found in the world.The vast majority of adolescents (90%) live in low or middle income countries[3].The associated factors of anemia among adolescent girls differ from one research study to another, like low dietary diversity score, living status of adolescents with either of the two parents, duration of menstruation, history of parasitic infections, low socio-economic status, household family size, inadequacy of dietary iron intake, drinking tea after a meal, low BMI, being stunted and under weight[4].

Nutrition plays a vital role in adolescents overall growth & development. Nutrient requirements are higher during adolescence than at any other stages of life. Low nutrients or inadequate food causes iron deficiency in the body which leads to increased infection , maternal-child deaths, poor physical growth and decreased adult productivity[5].Studies found that the most common causes of anemia are due to poor dietary habits, lack of iron-folic acid supplementation, Vit. B-12 deficiency and presence of chronic diseases.[6]

Considering the adolescent girls health condition,this study aims to determine the prevalence of anemia by estimation of hemoglobin levels among the adolescent girls which constitute most vulnerable age group of the total anemic population.

Objectives of the study:

1. To estimate the hemoglobin levels among adolescent girls of Government Girls Higher Secondary School Nawakadal, Srinagar.

2. To determine prevalence of anemia among adolescent girls of Government Girls Higher Secondary School Nawakadal, Srinagar.

3. To find the association between hemoglobin levels of adolescent girls with their demographic variables such as (age, socioeconomic status, religion, type of family, educational status of mother, occupation of father).

Research Methodology:

In this study quantitative research approach and non-experimental descriptive design was used.

Data Collection Procedure:

The investigator took informed consent from study subjects to confirm their willingness to participate in the study. A total of 30 students from class 9th, 10th, 11th, 12th of Government Girls higher secondary Institute Nawakadal, Srinagar were selected by random sampling technique. The study subjects were approached and rapport was established by self- introduction and were informed about the purpose of the study. The confidentiality, anonymity and autonomy of their responses were assured during data collection.

1ml of venous blood was drawn by venepuncture under aseptic precautions and it was collected in EDTA (Ethylene diamine tetra acetic acid) vacutainers by four investigators and assisted by 3 other team members. The collected blood samples were analysed by Sahli's hemoglobinometer (which is a manual device used to determine the quantity of haemoglobin in blood) in the Kashmir Clinical Laboratory, Wazir Bagh, Srinagar, Kashmir.

Criteria evalvation of hemoglobin levels - (Haemoglobin concentration scale for Assessment of anemia)[7]

S.No.	Reference Range	Remarks
1.	>12gm/dl	Normal Hb levels
2.	>11gm/dl and <11.9gm/dl	Mild Anemia
3.	>8gm/dl and<10.9gm/dl	Moderate anemia
4.	<8gm/dl	Severe anemia

RESULTS :

Table 1 : Sociodemographic Variables

SOCIODEMOGRAPHIC VARIABLES		Frequency(f)	Percentage (%)
Age in years	14	8	26.67
	15	10	33.33
	16	3	10
	17	4	13.33
	18	2	6.67
	19	3	10
Educational Status of Mother	Illiterate	10	33.33
	Primary	13	43.33
	Secondary	4	13.34
	College and above	3	10
Occupation of father	Government employee	2	6.67
	Businessman	21	70
	Others	7	23.33
Religion	Muslim	27	90
	Non-muslim	3	10
Type of family	Extended Family	3	10
	Nuclear Family	27	90
Socioeconomic status	Upper class(26k-29k)	5	16.67
	Upper middle class(16k-25k)	9	30
	Lower middle class(11k -15k)	8	26.67
	Upper lower class(5k-10k)	3	10
	Lower class (below 5k)	5	16.66

Table 2: Descriptive statistics regarding average hemoglobin level among adolescent girls

(Mean±SD)	Mode	Median	Minimum	Maximum	Range
(10.69±2.64)	11	11	5.4	12.6	7.2

Table 3 :Distribution of haemoglobin level among adolescent girls(n=30)

Haemoglobin level	Haemoglobin level	Percentage (%)
Normal>12gm/dl	8	26.67
Mild anemia>11gm/dl and <11.9gm/dl	**13**	**43.33**
Moderate anemia>8gm/dl and <10gm/dl	8	26.67
Severe anemia <8gm/dl	1	3.33

Table 4: Association of haemoglobin levels with selected demographic variables

Sociodemographic variables		P value	Inference
Age in years	14	0.01	S
	15		
	16		
	17		
	18		
	19		
Educational Status of Mother	Illiterate	0.001	S
	Primary		
	Secondary		
	College and above		
Occupation of father	Government employee	0.28	NS
	Businessman		
	Others		
Religion	Muslim	0.02	S
	Non-muslim		
Type of family	Extended Family	0.001	S
	Nuclear Family		
Socioeconomic status	Upper class(26k-29k)	0.03	S
	Upper middle class(16k-25k)		
	Lower middle class(11k - 15k)		
	Upper lower class(5k-10k)		
	Lower class (below 5k)		

S= Significant , NS= Non- Significant

Discussion:

Findings of the study that the Mean±SD of blood haemoglobin level among the adolescent girls was (Mean ±SD 10.69 ±2.64 g/dl). The study also revealed that statistically significant association was found between hemoglobin levels of adolescent girls with demographic variables like age (p= 0.01), educational status of mother(p=0.001), religion (p=0.02), type of family(p=0.01) and socioeconomic status (p=0.03).These findings are consistent with the cross sectional study conducted by Rana S, Kumar R, Anand N, Hussain S[8] on prevelance of anemia among 550 adolescent girls in Dehradun, Uttarakhand, India.

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