

AWARENESS ON IRON DEFICIENCY ANEMIA AMONG URBAN ADOLESCENT GIRLS OF NEW DELHI

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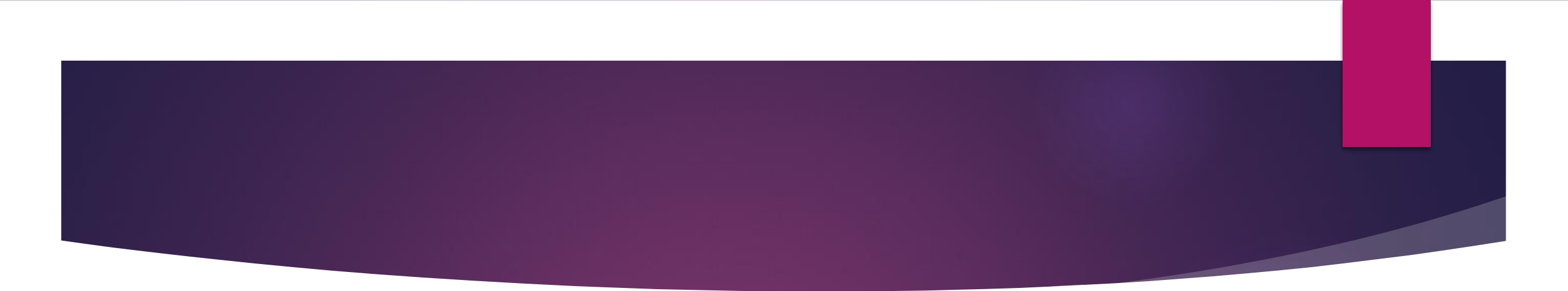
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INTRODUCTION

- ▶ Adolescence has been defined by the World Health Organization as the period of life spanning the ages between 10 to 19 years. This is the formative period of life when the maximum amount of physical, psychological, and behavioral changes take place. India is undergoing demographic transition and the current decade is witnessing the largest increase in the population of adolescents as they represent a significant segment of India.
- ▶ Anemia affects over 800 million women worldwide. In India, it is classified as a major public health problem as it is estimated that 52% of nonpregnant women of reproductive age are anemic. According to the World Health Organization's 2009 Global health risks report, iron-deficiency anemia accounted for 400,000 deaths and 1.5% of the global Disability Adjusted Life Years in 2004.
- ▶ Iron-deficiency also has important consequences for the future generations, as iron-deficiency anemia increases the risk for preterm labor, low birth weight, infant mortality and predicts iron-deficiency in infants after 4 months of age. It also leads to cognitive deficits and reduced intellectual performance among school children.

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- ▶ Despite increased national and international awareness and recent governmental intervention programs, the prevalence of anemia among Indian women has remained higher than 45% since 1990, and anemia trends remain strongly correlated with iron-deficiency. A 2007 Indian government “12 by 12 initiative”, aimed at ensuring that all Indian adolescents have 12 g/dL hemoglobin by 2012, listed the main causes of anemia in India as low dietary intake, poor availability of iron, chronic blood loss due to hookworm infestation, and malaria.
 - ▶ UNICEF/ WHO report indicates that there are approximately 2.5 cases of iron deficiency for each case of anemia. The functional consequences are known to occur prior to onset of clinical stage of iron deficiency. Iron deficiency and iron deficiency anemia (IDA) in adolescence is a major public health problem. Studies indicate that the incidence of anemia in adolescents tends to increase with age and corresponds with the highest acceleration of growth during adolescence. The highest prevalence is between the ages of 12-15 years when requirements are at peak.

RESEARCH QUESTIONS

- ▶ What is the level of awareness of iron deficiency anemia among urban adolescent girls of New Delhi?
- ▶ Is there any significant association between demographic characteristics and awareness about Iron Deficiency Anemia among urban adolescent girls?

OBJECTIVES

- ▶ To assess the awareness about iron deficiency anemia among urban adolescent girls.
- ▶ To investigate the association between demographic characteristics and awareness about iron deficiency anemia in adolescent girls.

RESEARCH METHODOLOGY

STUDY DESIGN

- ▶ Descriptive Cross-sectional study

STUDY AREA

- ▶ Slums of New Delhi

DURATION OF STUDY

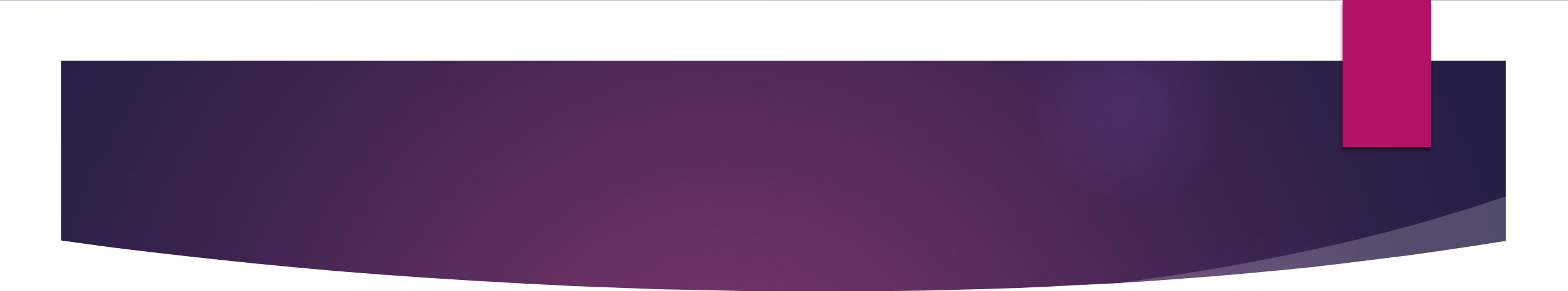
- ▶ 3 Months (February 2018- April 2018)

SAMPLE SIZE

- ▶ 150 adolescent girls

SAMPLING TECHNIQUE

- ▶ Convenient sampling technique



SAMPLE SELECTION

- ▶ The target population under the study focus was all adolescent girls in the age group of 10-19 years those who are residing in the slums of New Delhi. Adolescence has been defined by the World Health Organization as the period of life spanning the ages between 10 to 19 years.

TYPE OF DATA COLLECTED

- ▶ Primary data was collected through personal interview of study population of adolescent girls in the age group of 10-19 years
- ▶ Secondary data used for the study is corporation health action plan, UNICEF booklets, and websites.

DATA COLLECTION TOOL

- ▶ A Semi-Structured questionnaire was formulated for personal interview of adolescent girls. The questionnaire has sections about various aspects like demographic, social factors of the beneficiaries, their knowledge and awareness regarding the study topic.

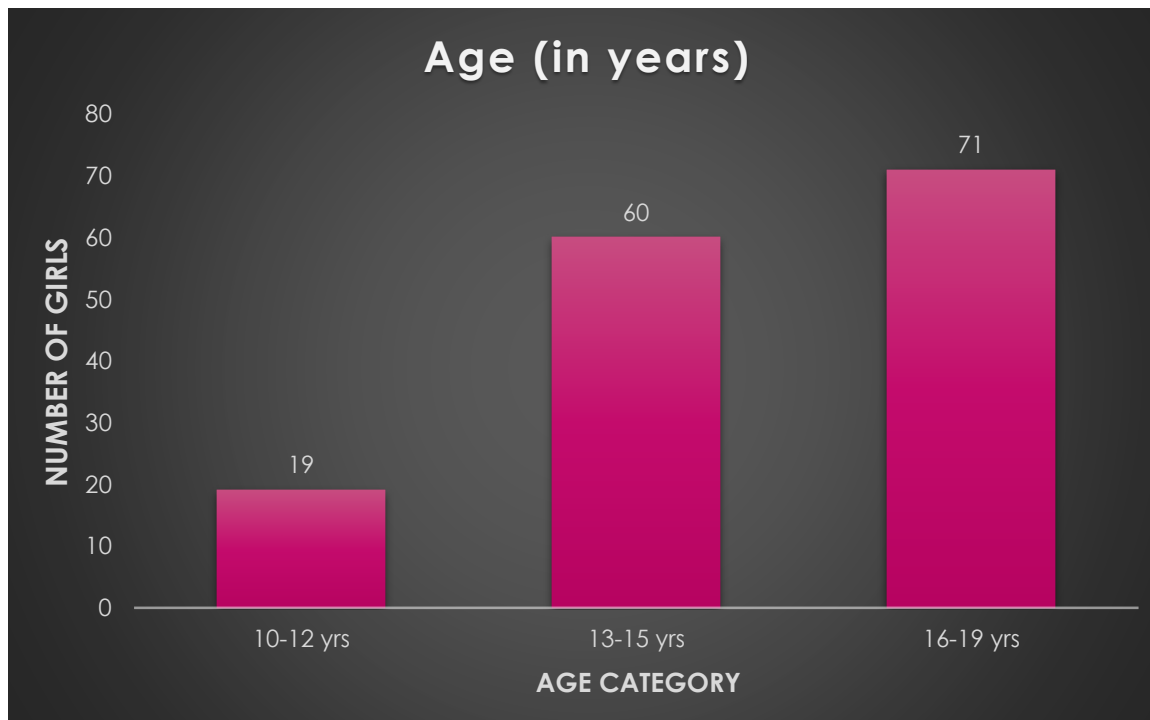
DATA ANALYSIS PROCEDURE

- ▶ MS Excel was used to analyze data.

RESULTS

A. Demographic Characteristics taken for the study sample of 150 adolescent girls:

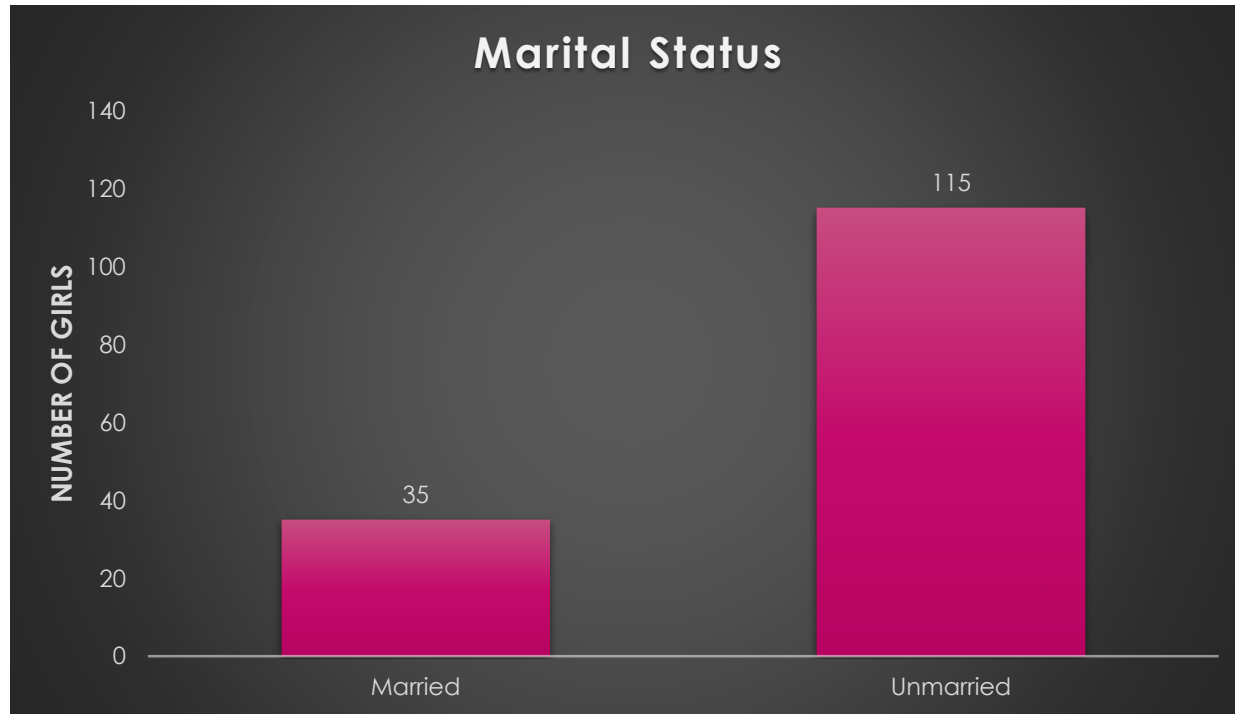
Graph 1- Age group of adolescent girls



Out of a sample of 150 adolescent girls,

- Around 47% i.e. 71 out of 150 adolescent girls belong to age group of 16-19 years.
- Around 40 % i.e. 60 out of adolescent girls belong to age group of 13-15 years.
- Around 13 % i.e. 19 out of adolescent girls belong to age group of 10-12 years.

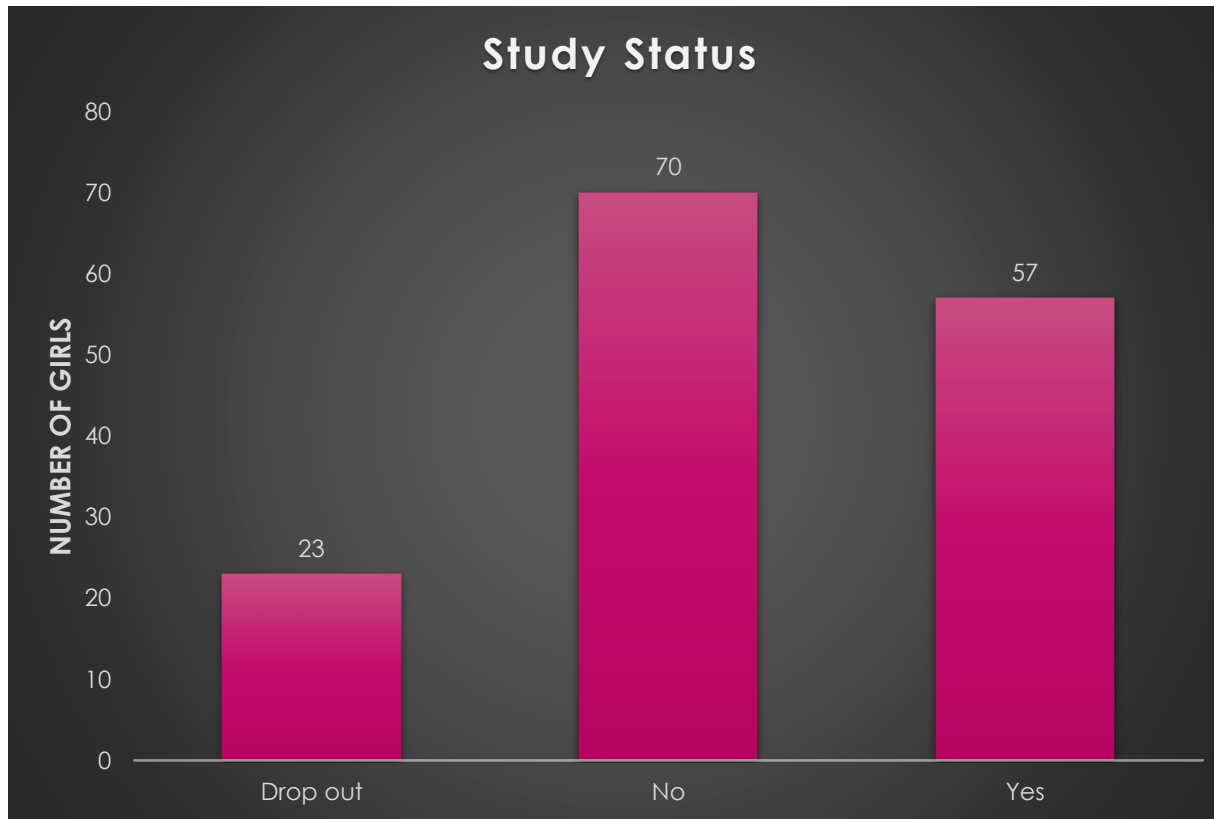
Graph 2- Marital status of the adolescent girls



Out of a sample of 150 adolescent girls,

- Around 76% i.e. 115 out of 150 adolescent girls were unmarried and,
- Around 23 % i.e. 35 out of adolescent girls belong were married.

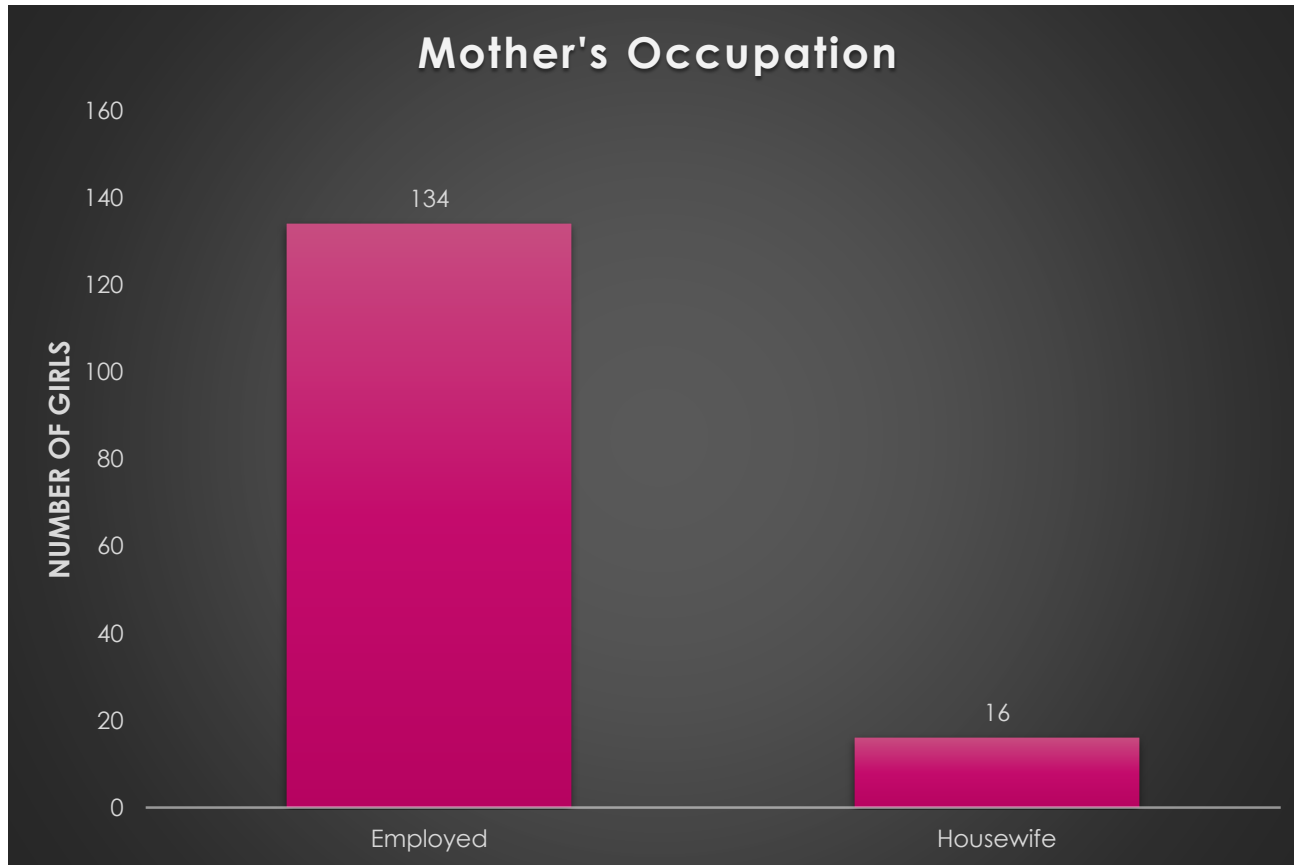
Graph 3- Study Status of Adolescent girls



Out of a sample of 150 adolescent girls,

- Only 38% adolescent girls were going to the school regularly
- 47 % adolescent girls were not going to school
- 15% dropped out of school due to some unforeseen reasons.

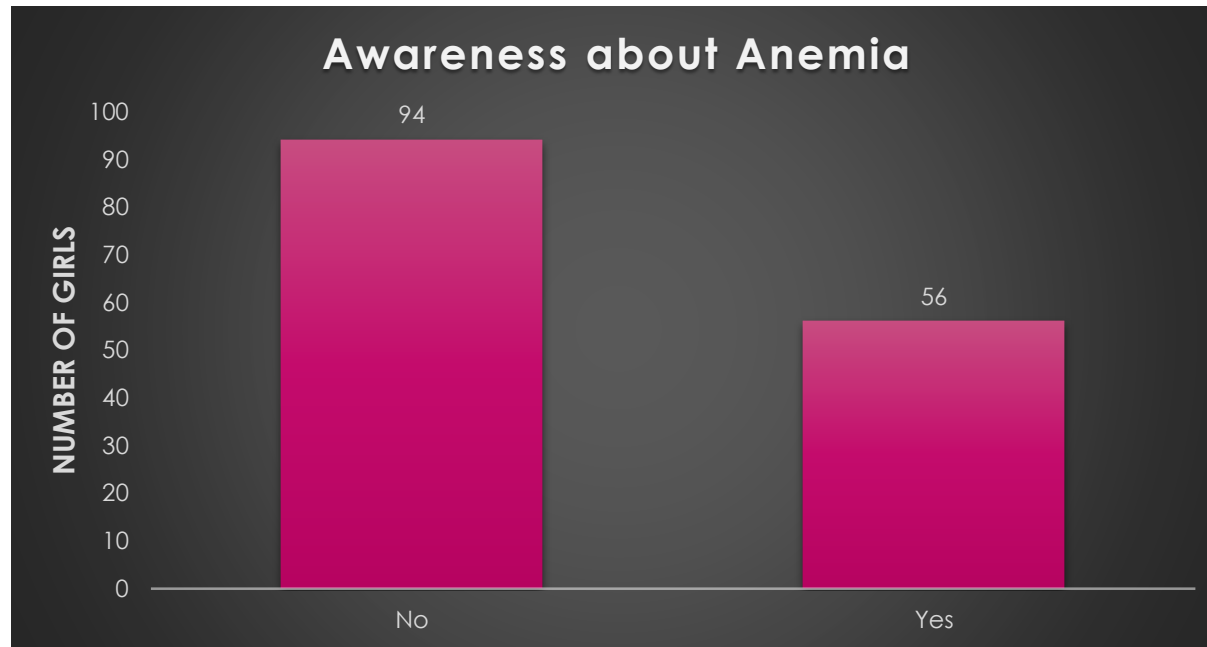
Graph 4- Occupation of mothers of adolescent girls.



- Only 10% mothers of adolescent girls were housewife and rest of the mothers were working.

B. Awareness about Iron Deficiency Anemia among adolescent girls

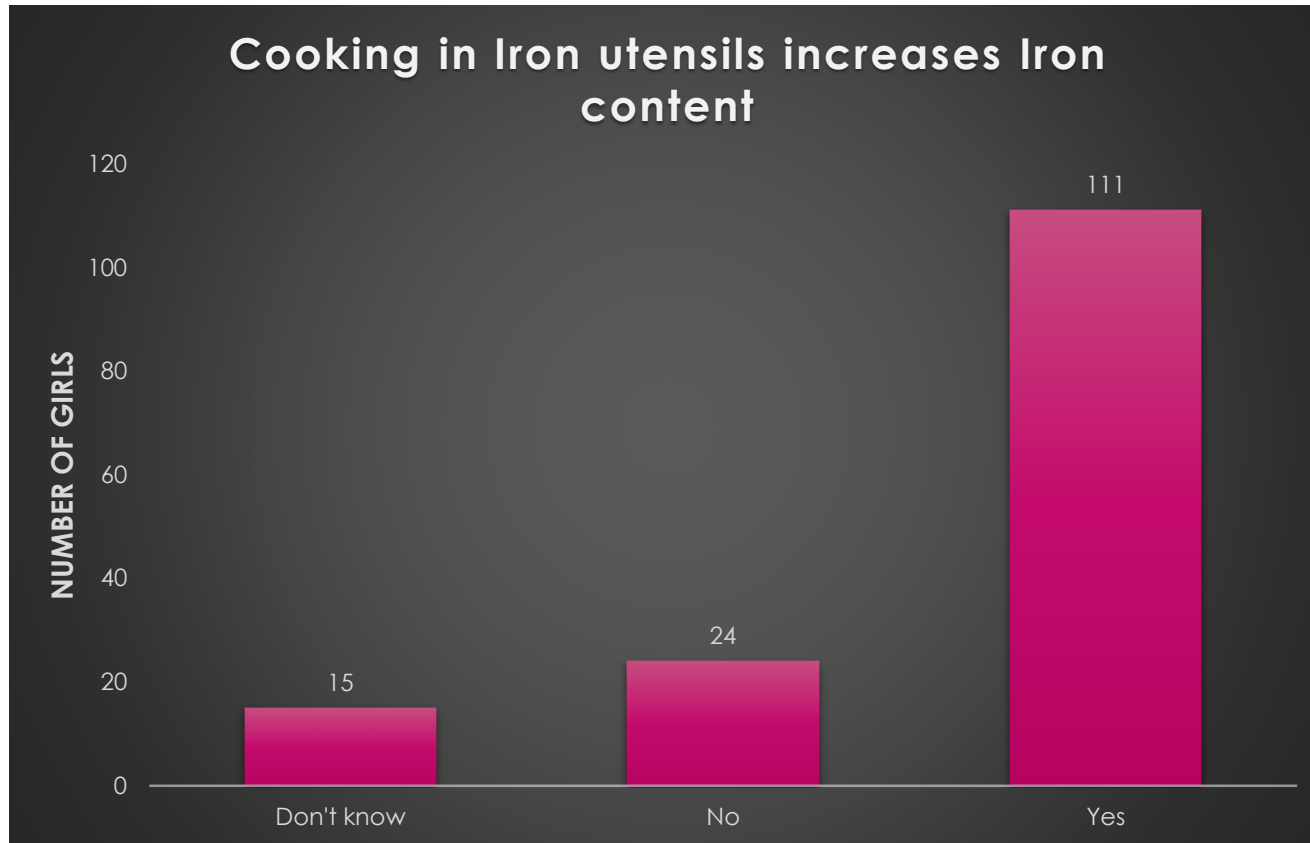
Graph 5 - Awareness regarding Anemia among number of adolescent girls taken into study.



Out of a sample of 150 adolescent girls,

- Only 37% i.e. 56 out of 150 adolescent girls had heard about anemia whereas, 63% of them had not even heard about anemia.

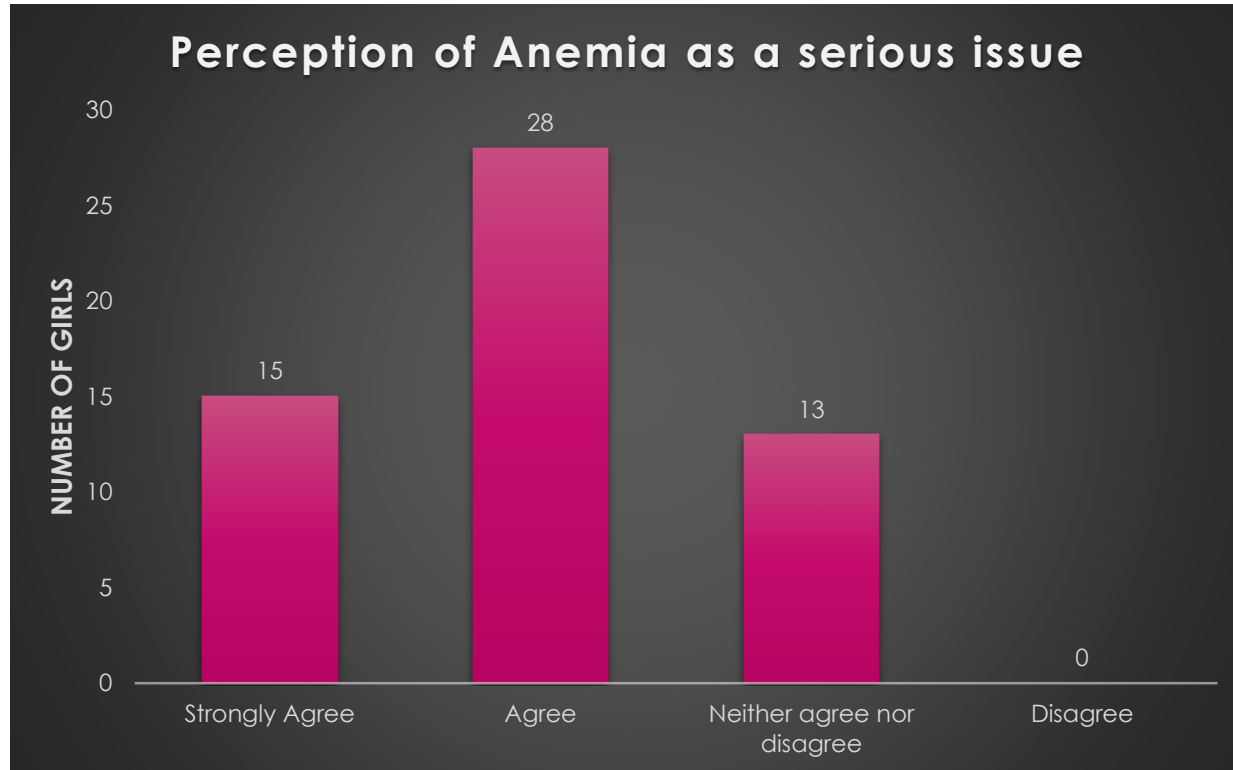
Graph 6 – Awareness regarding cooking in iron utensils increases iron content



Out of a sample of 150 girls,

- Around 74% of adolescent girls were aware that cooking in iron utensils increases iron content.
- Only 10% of adolescent girls were unaware of this.

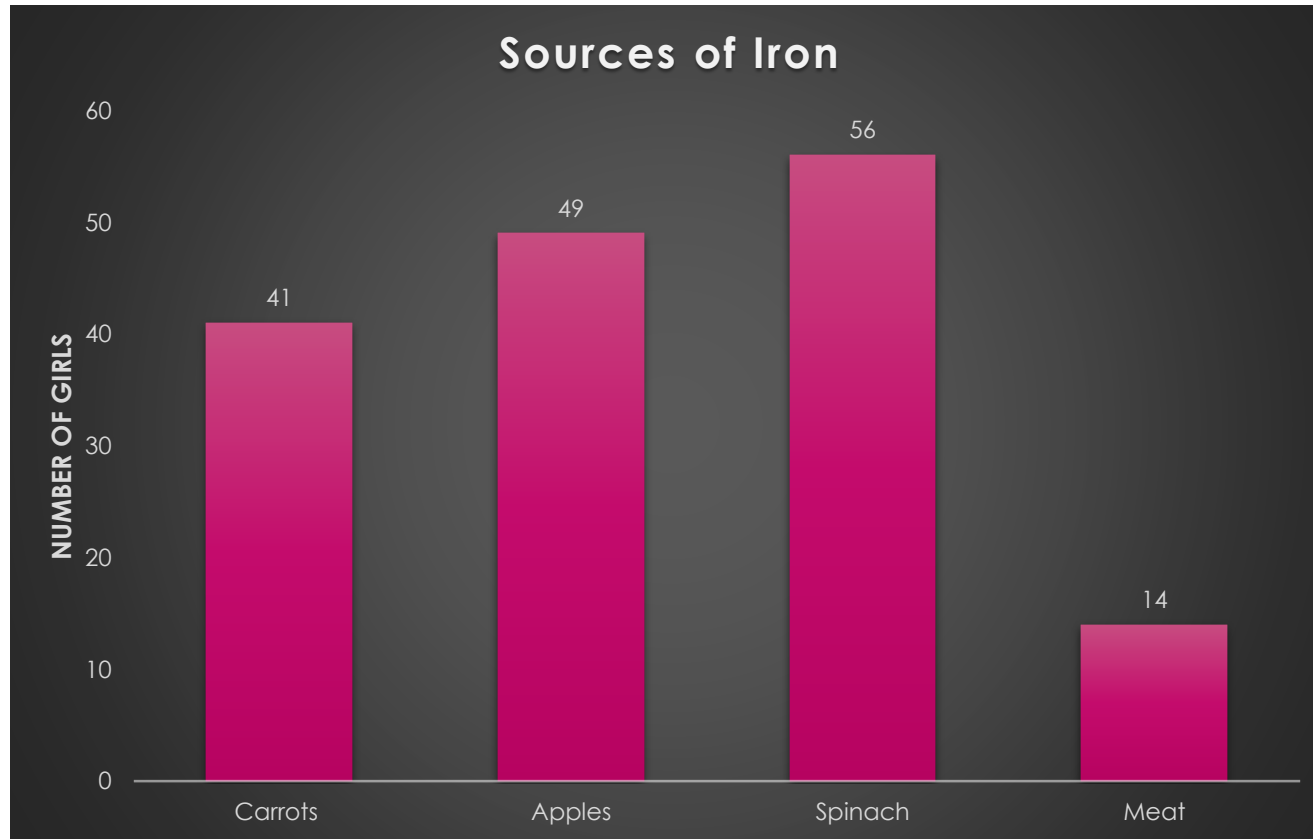
Graph 7- Perception of adolescent girls about Anemia as a serious issue



From the findings, there were 56 adolescent girls who were aware about anemia. Out of those 56 adolescent girls, when asked about the perception of anemia as a serious issue,

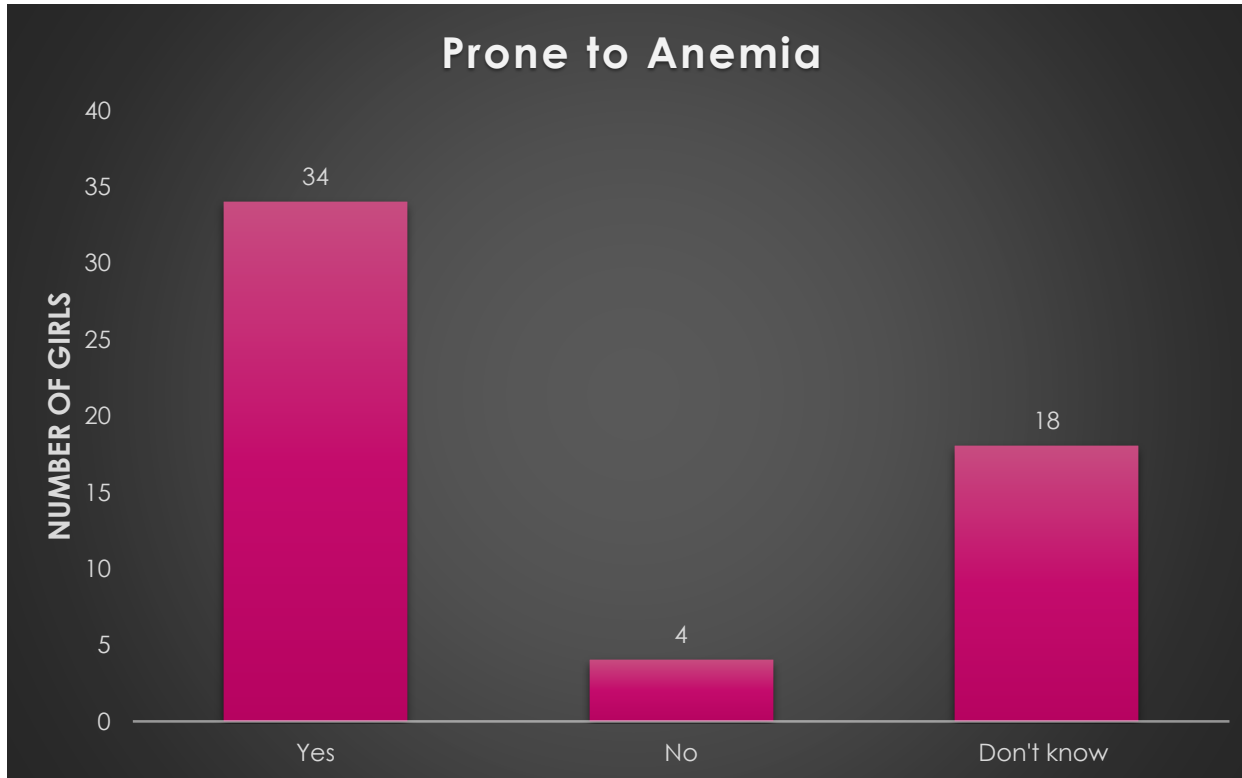
- 43 out of the 56 adolescent girls who were aware about anemia also agreed Anemia as a serious issue whereas, 13 girls were neutral about their perception and none of them disagreed with the same.

Graph 8- Awareness concerning iron content in different foods.



- Adolescent girls with knowledge about IDA, 71.4% knew that different foods like carrots, spinach are the rich sources of iron and only 30% did not know food contained iron.
- This seems that majority of the girl's population are aware about food supplements that contain iron, but still there are many who do not see any benefits of taking iron supplements which could be due to their high cost, the lack of education and counseling given by elders in the community and health practitioners.

Graph 9 represents the awareness about adolescent girls being more prone to anemia.



From the above findings, there were 56 adolescent girls who were aware about anemia.

Out of those 56 adolescent girls,
•34 out of the 56 adolescent girls were aware that adolescent girls are more prone to Anemia

•4 out of 56 adolescent girls do not think that they are more prone to anemia whereas, 18 out of 56 adolescent girls were totally unaware of it.

Association between Demographic Characteristics and awareness about Iron Deficiency Anemia in adolescent girls

Awareness about anaemia w.r.t. Study Status					
			Awareness about Anaemia		Total
			No	Yes	
Study Status	Drop out	Count	16	7	23
		% of Total	10.7%	4.7%	15.3%
	No	Count	65	5	70
		% of Total	43.3%	3.3%	46.7%
	Yes	Count	7	50	57
		% of Total	4.7%	33.3%	38.0%
Total		Count	88	62	150
		% of Total	58.7%	41.3%	100.0%

Table 1

From the given table, it seems that adolescent girls who had heard about anemia depends on the study status as,

- Out of those 57 adolescent girls that go to school regularly, 50 adolescent girls were aware about anemia.
- Out of those 70 adolescent girls that do not get chance to go school, only 5 girls were aware about anemia.

Therefore, the above finding reflects that education is the key factor that affects the awareness about Iron Deficiency Anemia.

Table 2

Awareness about Anaemia in Different Age Category					
			Awareness about Anaemia		Total
			No	Yes	
Age Category	10-12 years	Count	13	6	19
		% of Total	8.7%	4.0%	12.7%
	13-15 years	Count	32	28	60
		% of Total	21.3%	18.7%	40.0%
	16-19 years	Count	42	29	71
		% of Total	28.0%	19.3%	47.3%
Total		Count	87	63	150
		% of Total	58.0%	42.0%	100.0%

Another demographic characteristics used to analyze the association with awareness about anemia was Age category,

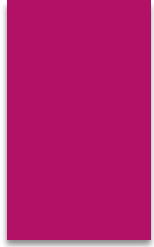
- Out of adolescent girls belonging to age category 13-15 years, 28 adolescent girls were those who had heard about anemia.
- Out of 71 adolescent girls belonging to age category 16-19 years, 29 adolescent girls had heard about anemia.
- None of the girls belonging to age category of 10-12 years had heard about anemia.

Awareness about Anemia w.r.t. Mother's Occupation					
			Awareness about Anemia		Total
			No	Yes	
Mother Occupation	Employed	Count	85	49	134
		% of Total	56.7%	32.7%	89.3%
	Housewife	Count	8	8	16
		% of Total	5.3%	5.3%	10.7%
Total		Count	93	57	150
		% of Total	62.0%	38.0%	100.0%

Table 3

The table represents the relationship between Mother's Occupation and Awareness about Anemia.

- There were 134 mother of adolescent girls who were employed and out of those 134 employed mother of adolescent girls, 85 were unaware about Anemia and 49 adolescent girls were aware about Anemia.
- Out of 150 adolescent girls' mother, 16 mothers of adolescent girls were housewife. Out of those 16, 8 girls were aware about anemia and 8 were unaware about Anemia.



Awareness about Anemia w.r.t. Marital Status of Adolescent Girls					
			Awareness about Anemia		Total
			No	Yes	
Marital Status	Unmarried	Count	66	49	115
		% of Total	44%	32.7%	76.7%
	Married	Count	28	7	35
		% of Total	18.7%	4.7%	23.3%
Total		Count	94	56	150
		% of Total	62.7%	37.3%	100.0%

Table 4

The table represents the relationship between Marital Status and Awareness about Anemia.

- Out of 115 adolescent girls those were unmarried, 66 adolescent girls were unaware about anemia and 49 girls were aware about anemia.
- Out of 35 married adolescent girls, 28 were the girls that were unaware about anemia and only 7 were aware about the same.

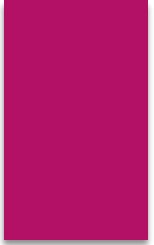
Null Hypothesis	Demographic Characteristics	Chi-Square value	p-Value	p< 0.05	Result
There is no association between Study Status and Awareness about Anemia	Study Status	85.42	0.00	0.00<0.05	There is statistically significant association between study status and awareness about anemia. Null Hypothesis rejected
There is no association between Age category and Awareness about Anemia	Age Category	1.422	0.49	0.49>0.05	There was no statistically significant association between the two. Null Hypothesis accepted
There is no association between Mother's Occupation and Awareness about Anemia	Mother's Occupation	1.094	0.29	0.29>0.05	There was no statistically significant association with Mother's occupation and awareness about anemia Null Hypothesis accepted
There is no association between Marital Status and Awareness about Anemia	Marital Status	5.86	0.01	0.01<0.05	There is statistically significant association between marital status and awareness about anemia Null Hypothesis rejected

Table 5 represents Association between Demographic characteristics and Awareness about Anemia

Demographic characteristics were analyzed to identify any significant association with the awareness about Anemia. It clearly seems that study status shows significant relationship with the awareness about anemia as p value was less than 0.05. Age category and Mother's occupation did not show a significant relationship with the awareness about anemia. A significant relationship was seen between marital status and awareness about anemia as p value 0.01 which is less than 0.05.

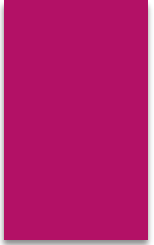
DISCUSSION

- ▶ Adolescence is an opportune time for interventions to address anemia. Not only is there a need (growth, preparation for pregnancy), but large numbers of both boys and girls can be reached easily if school attendance or participation in other group activities is high.
- ▶ Education seems to be critical for awareness regarding Iron Deficiency Anemia (IDA) as this study shows that only 38% of adolescent girls who attended school were aware of IDA. Therefore, there is a high need for creating awareness among adolescent girls. These girls residing in slum areas should be encouraged for education and not only them but also their parents can be counselled to provide education to their children.
- ▶ School settings can be an essential, effective, and efficient place to implement a comprehensive nutrition education program to develop the knowledge of school going children with respect to anemia.

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- Health education through a school based intervention can be provided to educate about the importance of nutrition for preventing anemia, to introduce with the food varieties (sources of vitamins, minerals, iron etc.), to teach the causes and consequences of anemia and to inform different strategies for the prevention of iron deficiency anemia.
 - Parents as well as teachers should be sensitized on under nutrition, role of healthy diet and consequences of anemia. Though initiation of Iron fortification had been done, it should be in commonly reachable vehicles like salt, sugar and available for all, which doesn't demand individual co-operation.
 - Counseling can be done to empower adolescents to generate the awareness of iron deficiency anemia so that precaution measures can be taken to avoid anemia in adulthood.
 - Special education and awareness programs should be planned and implemented keeping the family of adolescent girls in mind which would involve bringing the mother and daughter on the same platform and teaching them together.

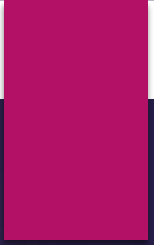
CONCLUSION

- ▶ Adolescent girls are in a period of rapid physical, sexual and emotional development. For about five to six years of their life, most of them suffer from various emotional and psychological problems.
- ▶ Anemia poses a threat to the girl's life that has lifelong consequences, an additional burden for the nutritional interventions.
- ▶ School based nutrition education has potential to improve dietary practices that affect young person's health, growth, and intellectual development. This health educational intervention will enhance adolescent girl's knowledge, skills and support to build positive attitudes towards preventing nutritional anemia. It is also important to conduct these sessions with a regular interval with updated content and diversified methodologies that respect regional and local characteristics.

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- School authorities, community leaders and parents must engage and commit to implementing and sustaining nutrition education program within the school. Such support is crucial to promote healthy behaviors.
 - Significant association with awareness about anemia like study status suggests a need to develop strategies for intensive adult education and to improve the socio-economic status of the population through poverty alleviation programs. This should be supported by programs for the prevention of anemia among adolescent girls through nutrition education and anemia prophylaxis.
 - Therefore, to increase the awareness about Anemia, Health education plays an effective role in improving knowledge of adolescents and changing their attitude towards it.

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THANK YOU

QUESTIONNAIRE

1. Name:

2. Age:

3. What is your current marital status?

- ▶ Married
- ▶ Unmarried

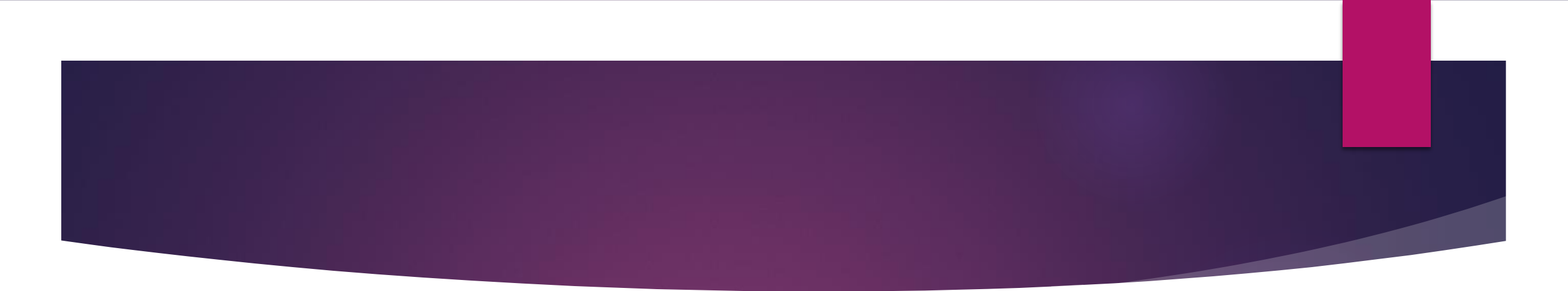
4. Do you go to school?

- ▶ Yes
- ▶ No
- ▶ Drop out

If No, Skip to Question 6

5. Highest level of education?

- ▶ Ans:



6. What is your mother's occupation?

- ▶ Housewife
- ▶ Employed

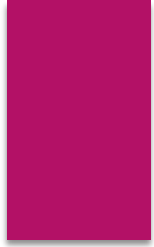
7. Have you heard about anemia?

- ▶ Yes
- ▶ No

Skip to Question 12

8. How did you come to know about Anemia? (You can Ans more than one)

- ▶ Health worker
- ▶ School teacher
- ▶ Family members
- ▶ Friends
- ▶ Mass media (print media/ electronic media/ poster/ banner/ hoarding/ wall writing)
- ▶ Others, please specify



9. Do you agree anemia as a serious issue?

- ▶ Strongly disagree
- ▶ Disagree
- ▶ Neither agree nor disagree
- ▶ Agree
- ▶ Strongly agree

10. What are the symptoms of anemia?

- | | | | |
|-----------------------------|-----|----|------------|
| ▶ Darkness in front of eyes | Yes | No | Don't Know |
| ▶ Dizziness | Yes | No | Don't Know |
| ▶ Weakness | Yes | No | Don't Know |
| ▶ Faint | Yes | No | Don't Know |
| ▶ Pale | Yes | No | Don't Know |
| ▶ Others, please specify | | | |

11. What do you think among these can be used for prevention of anemia?

- | | | | |
|-------------------------------|-----|----|------------|
| ▶ Intake of iron tablets | Yes | No | Don't Know |
| ▶ Usage of iron utensils | Yes | No | Don't Know |
| ▶ Intake of deworming tablets | Yes | No | Don't Know |
| ▶ Intake of iron rich food | Yes | No | Don't Know |
| ▶ Intake of vitamin C | Yes | No | Don't Know |
| ▶ Others, please specify | | | |

12. Which of the following are rich sources of iron?

- | | | | | |
|----|------------------------|-----|----|------------|
| a) | Carrots | Yes | No | Don't Know |
| b) | Apples | Yes | No | Don't Know |
| c) | Spinach | Yes | No | Don't Know |
| d) | Meat | Yes | No | Don't Know |
| e) | Others, please specify | | | |

13. Do you think that female adolescents require more iron after reaching menarche?

- a) Yes
- b) No
- c) Don't Know

14. Which of the following statements are correct?

- | | | | | |
|----|---|-----|----|------------|
| a) | Cooking in iron utensils increases iron content | Yes | No | Don't Know |
| b) | Consumption of green leafy vegetables helps in iron absorption? | Yes | No | Don't Know |
| c) | Adolescent girls are more prone to anemia | Yes | No | Don't Know |
| d) | Anemia in adolescent girls can't be prevented | Yes | No | Don't Know |