Research Article

PREVALENCE OF *PAANDU* (ANAEMIA) AMONGST PATIENTS REPORTING AT OUTPATIENT DEPARTMENT OF NATIONAL INSTITUTE OF SIDDHA

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ABSTRACT

Anaemia is the most common nutritional problem in the world .In the outpatient department of National institute of Siddha the significant numbers of anaemia cases are reporting for treatment. As the part of partial completion of 1st year MD degree the investigator select the minor project to determine the data about prevalence of *Paandu* (Anaemia) in NIS OPD patients. This study includes 500 OPD patients. OPD patients in the age between 13-74 years were randomly selected daily (Systematic random sampling method). A pre-designed self-administrated questionnaire interview method is used for collecting data about the patients. Information on personal characteristics, socio economic status, diet, lab investigations, clinical profiles are obtained. The study results showed that the prevalence of anemia amongst patients reporting at NIS OPD were 45.6%. The mean haemoglobin concentration was 11.4g/dl in female and 12.8g/dl in male. Majority of female in reproductive age (15-49 years) had the highest prevalence of anemia. And the high proportion of microcytic hypochromic anaemia (22.2%) was founded in the selected samples which indicate that Iron deficiency was the main cause of anaemia. Effect of socio economic status on anemic patients reported in NIS also calculated according to 'Modified Kuppusamy socio economic scale' which results that patients belongs to the upper lower status (12.2%) are more prone to anemia. Therefore the results of this study can be used to design target interventions aimed at reducing the prevalence of anemia in NIS OPD and to help conduct the interactive educational programs for improve disease awareness in female patients especially. And further studies are needed for clarify prevalence and etiology of anaemia in school going children (Below 13 years) at NIS OPD.

KEYWORDS: Prevalence of *Paandu*, Anaemia, OP Department of National Institute of Siddha.

INTRODUCTION

Anaemia is the most common nutritional problem in the world. The estimated prevalence of anaemia in developing countries is 39% in children <5 years, 48% in children 5–14 years, 42% in women 15–59 years, 30% in men 15–59 years, and 45% in adults >60 years.[1] Globally, anaemia affects 1.62 billion people, which corresponds to 24.8% of the population. The highest prevalence is in preschool-age children (47.4%), and the lowest prevalence is in men (12.7%). However, the population group with the greatest number of individuals affected is pregnant women (41.8%).[2] In women, anaemia may become the underlying cause of maternal mortality and perinatal mortality.[3] Nearly 50% of women of reproductive age and 26% of men in the age group of 15-59 years are anaemic.[4] In India prevalence (51%) is very high as compared to world prevalence. According to the National Family Health Survey (NFHS)-(III), more than half of women in India (55%) have anaemia, including 39% with mild anemia, 15% with moderate anemia and 2% with severe anaemia.[5] It is estimated that about 20%-40% of maternal deaths in India are due to anaemia and one in every two Indian women (56%) suffers from some form of anaemia.[6]

MATERIALS AND METHODS

It was a cross sectional study conducted in outpatient department of National Institute of Siddha, Ayothidass Pandithar hospital. The study was approved by IEC of National institute of Siddha and the IEC number is NIS/IEC/2018/6,7/5/18 also registered in CTRI and the number isCTRI/ 2018/ 06/014422. The study took place from June 2018 to August 2018 (3 months). In this study approximately 500 out patients in between the age group 13-74 were randomly selected without any bias for a sex,

occupation, socio economic status and duration of disease. A pre-designed self-administrated questionnaire interview method is used for collecting data about the patients. Data on demographic characteristics (including age, address of residence, education levels, occupation, salary, personal habits) was obtained. And their Socio economic status was calculated by using educational, occupational, income details (Modified kuppusamy socio economic scale).

Estimation of complete blood count (CBC) test was done for selected patients after obtaining informed consent.
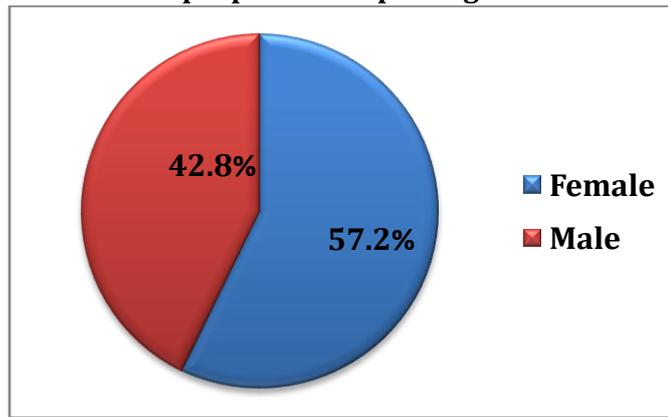
RESULTS

In the total 500 OPD patients there are 286 female patients (57.2%) and 214 male patients (42.8%) (Table1)

Table 1: Distribution of the patients reporting NIS OPD according to gender

Gender	Frequency	Percentage
Female	286	57.2%
Male	214	42.8%
Total	500	100%

Diagram1: Distribution of the sample patients reporting NIS OPD according to gender
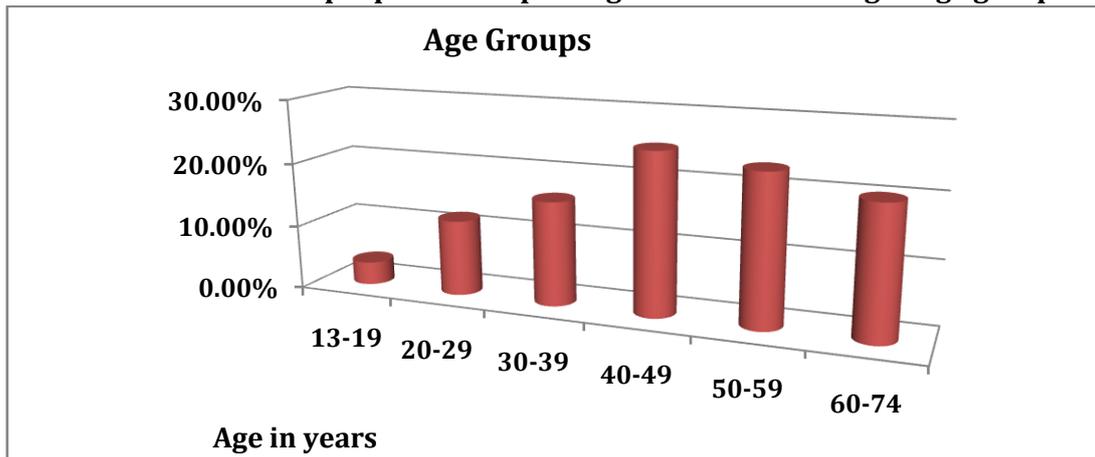

Inference

In the total 500 OPD patients there are 286 female patients (57.2%) and 214 male patients (42.8%) (Table1)

Age Group

Table 2: Distribution of the sample patients reporting NIS OPD according to age groups

Age in years	Frequency	Percentage
13-19	18	3.6%
20-29	59	11.8%
30-39	81	16.2%
40-49	125	25%
50-59	116	23.2%
60-74	101	20.2%

Diagram 2: Distribution of the sample patients reporting NIS OPD according to age groups
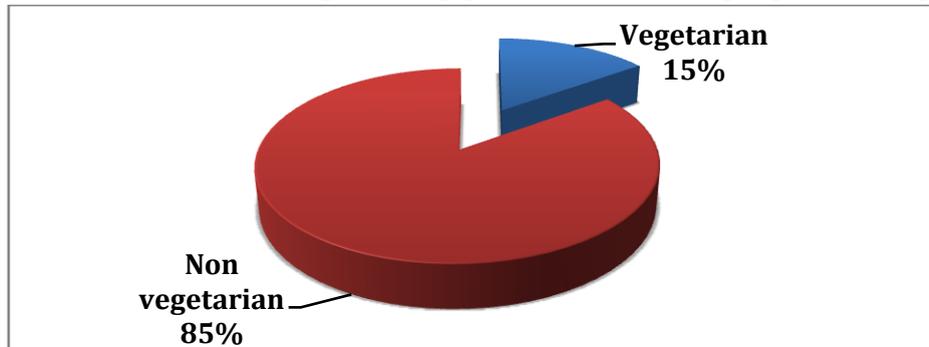
Inference

Out of 500 patients 3.6% come under age group in between 13-19 years, 11.8% come under age group in between 20-29 years, 16.2% come under age group in between 30-39 years, 25% come under age group in between 40-49 years, 23.2% come under age group in between 50-59 years, 20.2% come under age group in between 60-74 years.

Food Habit

Table 3: Distribution of the non-veg. and veg. patients in the sample patients reporting NIS OPD

Veg/Non Veg	No of Patient	Percentage
Vegetarian	75	15%
Non vegetarian	425	85%

Diagram 3: Distribution of the non-veg. and veg. patients in the sample patients reporting NIS OPD
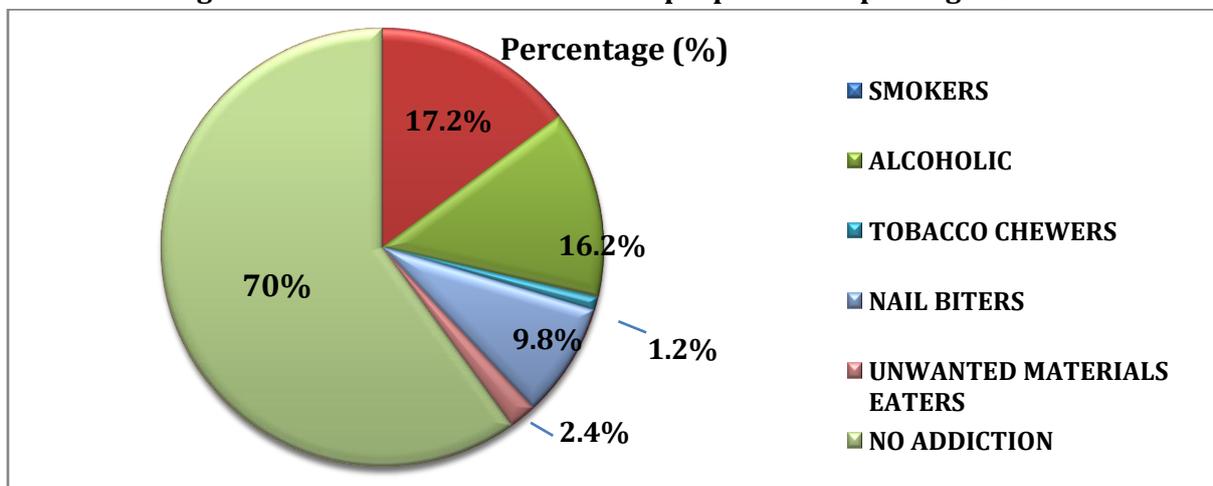

Inference

Out of 500 patient 85% were non-vegetarian and 15% were vegetarian.

Personal Habits

Table 4: Personal habits in the sample patients reporting NIS OPD

S.No	Personal habits	Frequency	Percentage (%)
1	Smokers	86	17.2%
2	Alcoholic	81	16.2%
3	Tobacco Chewers	6	1.2%
4	Nail Biters	49	9.8%
5	Unwanted Materials Eaters	12	2.4%
6	No Addiction	350	70%

**Diagram 4: Personal habits in the sample patients reporting NIS OPD**

Inference

Out of 500 patients 70% patients had no addictions and 17.2% patients were smokers, 16.2% patients were alcoholic, 9.8% patients were nail biters, 1.2% patients were tobacco chewers, 2.4% patients were unwanted materials (rice) eaters.

Anaemic and Non-anaemic distribution

Table 5: Distribution of anemia amongst the patients reported in NIS OPD

	Frequency	Percentage
Anaemic	272	54.4%
Non Anaemic	228	45.6%

Diagram 5: Distribution of anemia amongst the patients reported in NIS OPD
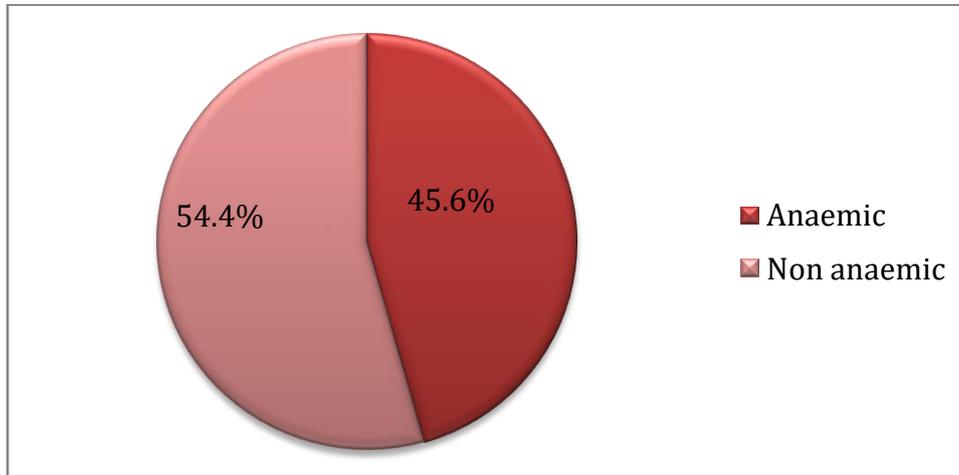
Inference

Out of 500 patients 54.4% are non-anaemic and 45.6% are anaemic.

Anaemia According to Age Group

Table 6: Distribution of anemia amongst the patients reported in NIS OPD according to age groups

| Age in Years	Anemic Frequency		Non-anemic Frequency	
	Male	**Female**	**Male**	**Female**
13-19	1	8	7	2
20-29	6	24	15	14
30-39	19	28	19	15
40-49	17	37	40	31
50-59	20	22	49	25
60-74	18	28	29	26
Total	81	147	159	113

Inference

Out of 500 patients 81 male patients were anemic and 147 female patients were anemic. Among them majority of females in reproductive age (15-49 years) had the highest prevalence of anemia.

Classification of Anaemia

Table 7: Distribution of anemia amongst the patients reported in NIS OPD according to WHO classification of anemia

	Frequency	Percentage
Non anaemic	272	54.4%
Mild anaemic	108	21.6%
Moderate anaemic	109	21.8%
Severe anaemic	11	2.2%

Diagram 7: Distribution of anemia amongst the patients reported in NIS OPD according to WHO classification of anemia
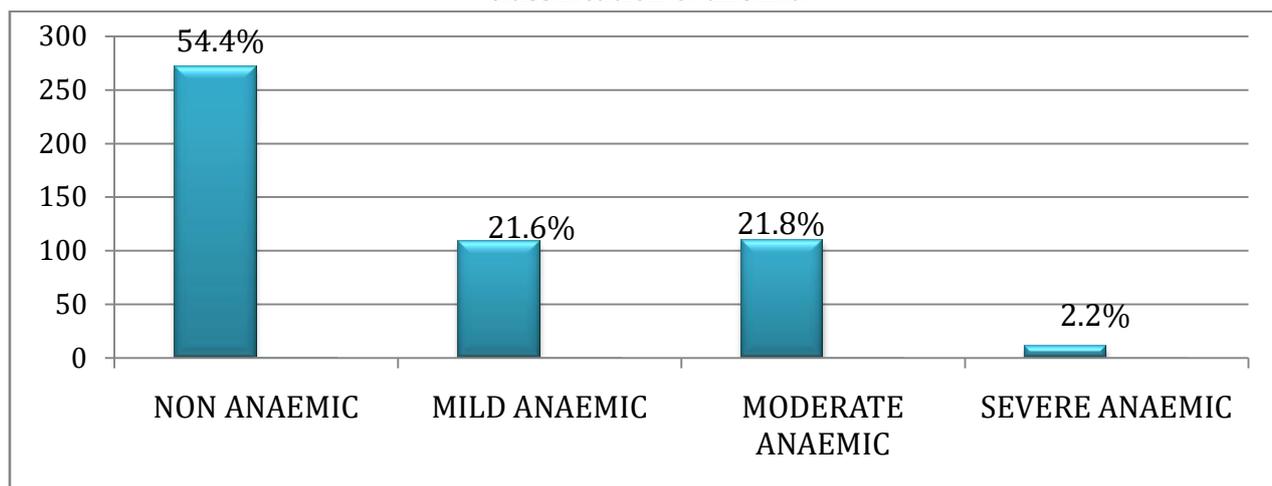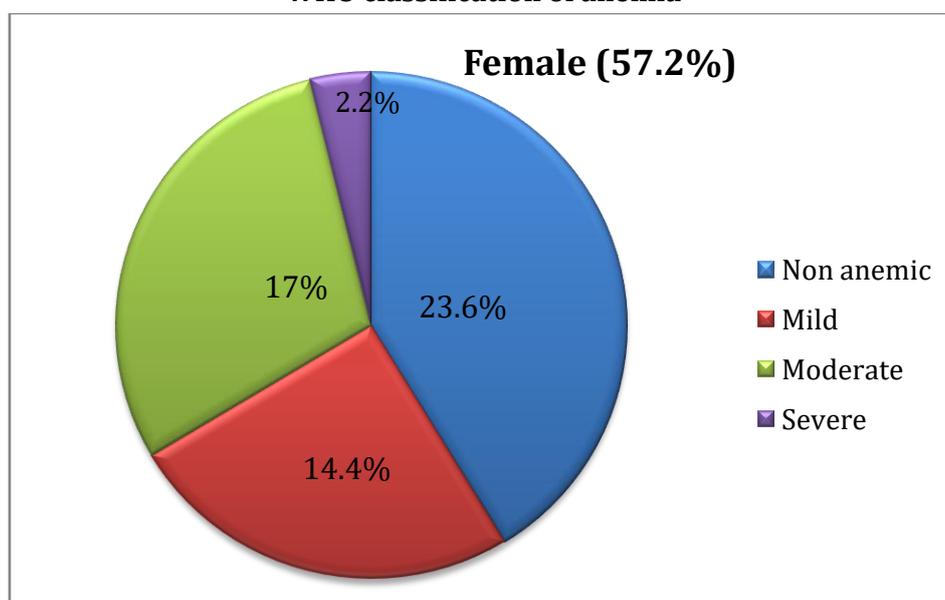

Inference

According to WHO classification of anemia, Anemia is defined as level of hemoglobin less than 12g/dl in female. Mild anemia is defined as hemoglobin level of 11-11.9g/dl, moderate anemia as hemoglobin level of 8-10.9g/dl and severe anemia was defined as hemoglobin level of less than 8g/dl among females. In this study 54.4% patients were non-anaemic and 21.6% patients belong to mild anaemia, 21.85% patients belong to moderate anaemia and 2.2% patients belong to severe anaemia.

Classification of Anaemia in According To Gender

Table 8: Distribution of anemia amongst the female patients reported in NIS OPD according to WHO classification of anemia:

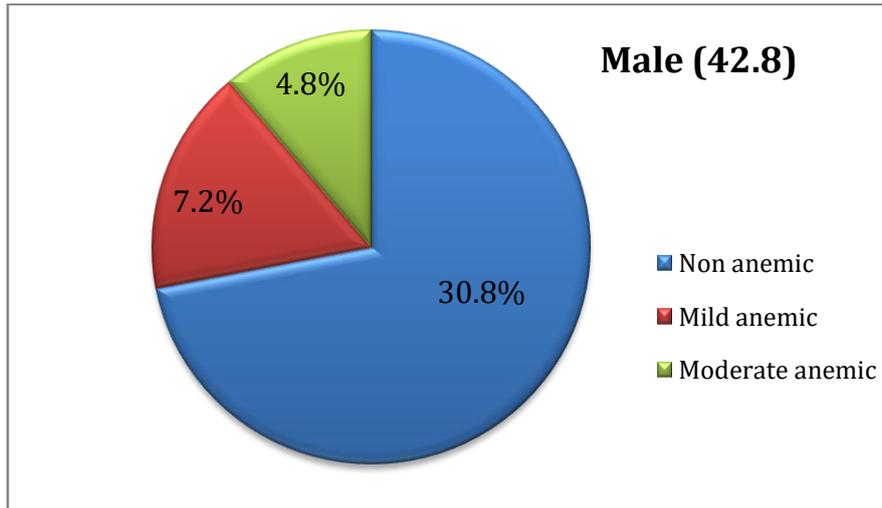|	Non anemic	Mild	Moderate	Severe
Male	154	36	24	0
Female	118	72	85	11

Diagram 8.1: Distribution of anemia amongst the female patients reported in NIS OPD according to WHO classification of anemia

Inference

In this study 23.6% female were observed as non-anaemic. And 14.4% female had mild anemia and 17% had moderate anaemia and then 2.2% of female had severe anemia.

Diagram 8.2: Distribution of anemia amongst the male patients reported in NIS OPD according to WHO classification of anemia
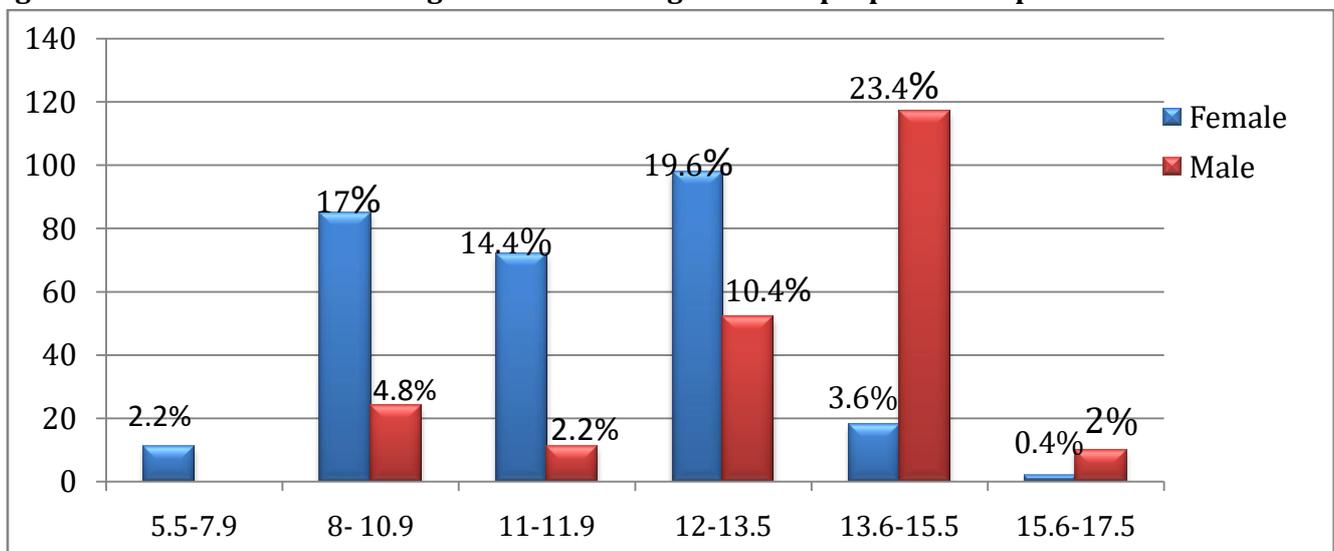

Inference

In case of male 30.8% male were noted as non anemic. And 7.2% male had mild anemia and 4.8% had moderate anaemia and then severely anaemic individuals were not observed in male.

Haemoglobin Distribution

Table 9: Distribution of Haemoglobin level amongst the sample patients reported in NIS OPD

Haemoglobin	Female		Male	
	Frequency	Percentage	Frequency	Percentage
5.5-7.9	11	2.2	0	0
8- 10.9	85	17	24	4.8
11-11.9	72	14.4	11	2.2
12-13.5	98	19.6	52	10.4
13.6-15.5	18	3.6	117	23.4
15.6-17.5	2	0.4	10	2

Diagram 7: Distribution of Haemoglobin level amongst the sample patients reported in NIS OPD

Inference

In this study 2.2% of female patient had hemoglobin level in between the range of 5.5-7.9g/dl, 17% of female patient and 4.8% of male patient had hemoglobin level in between the range of 8-10.9g/dl, 14.4% of female and 2.2% of male had the hemoglobin range of 11-11.9 g/dl, 19.6% of female and 10.4% of male had the

haemoglobin range of 12-13.5g/dl, 3.6% of female and 23.4% of male had the hemoglobin range of 13.6-15.5g/dl, 0.4% of female and 2% of male had the haemoglobin range of 15.6-17.5 g/dl.

Smear Study

Table 8: Distribution of anaemia according to smear studies amongst the patients reported in NIS OPD

Smear	Female	Male	Total	Percentage
Mild normocytic anemia	37	3	40	8%
Moderate normocytic anemia	7	2	9	1.8%
Mild microcytic hypochromic anemia	42	10	52	10.4%
Moderate microcytic hypochromic anemia	33	15	48	9.6%
Severe microcytic hypochromic anemia	9	2	11	2.2%
Total	128	32	160	32%

Diagram 8: Distribution of anaemia according to smear studies amongst the patients reported in NIS OPD
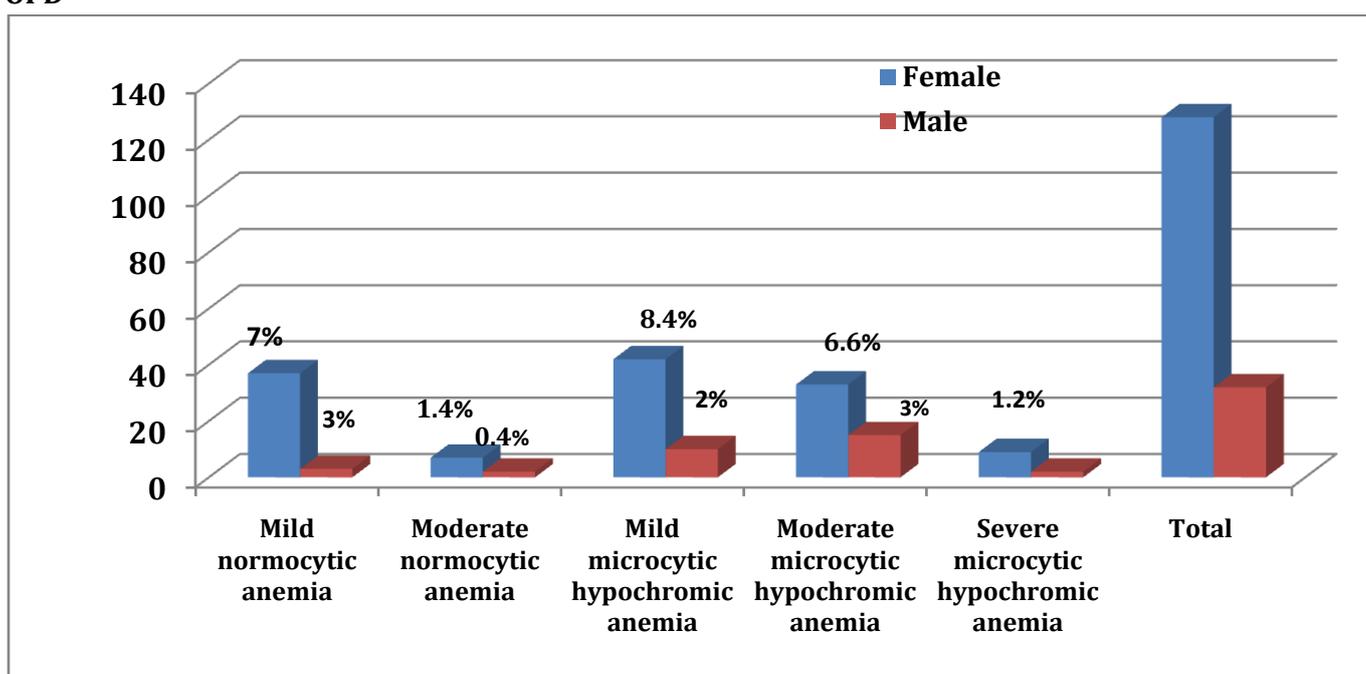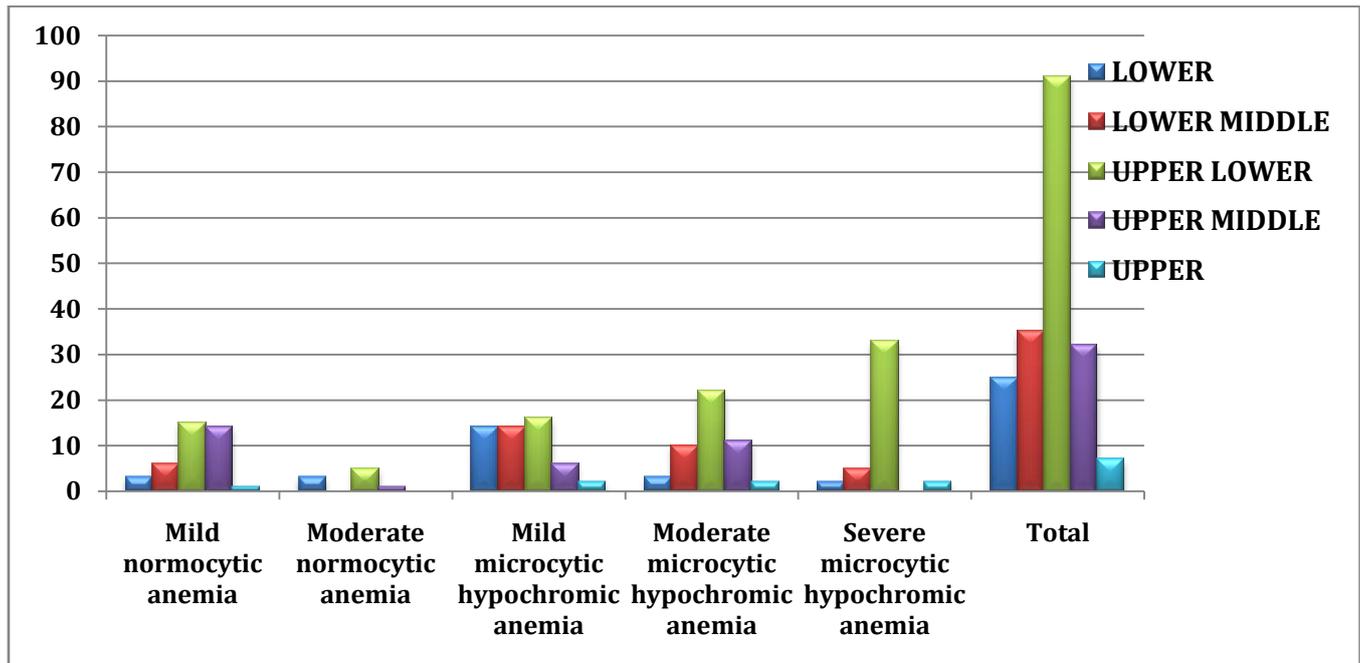

Inference

In the smear study high proportion of microcytic hypochromic anaemia (22.2%) was founded and which indicates that Iron deficiency was the main cause of anaemia amongst the patients reported in NIS OPD.

Relationship between the socioeconomic status and anemia

Figure 5: Relationship between the socioeconomic status and anemia amongst the patients reported in NIS OPD:

Smear	Lower	Lower middle	Upper lower	Upper middle	Upper
Mild normocytic anemia	3	6	15	14	1
Moderate normocytic anemia	3	0	5	1	0
Mild microcytic hypochromic anemia	14	14	16	6	2
Moderate microcytic hypochromic anemia	3	10	22	11	2
Severe microcytic hypochromic anemia	2	5	33	0	2
Total	25	35	91	32	7

Figure 5: Relationship between the socioeconomic status and anemia amongst the patients reported in NIS OPD:

Inference

In our study the prevalence of anemia was high among the people belongs to upper lower status (12.2%) according to Modified Kuppusamy's scale.

DISCUSSION

The exact figures for the prevalence of anaemia vary from study to study. This study was conducted to assess the prevalence of anemia amongst patients reporting at the NIS OPD which is observational type of cross sectional study includes 500 randomly selected patients. Prevalence of anaemia in all the groups is higher in India as compared to other developing countries.[9,10] In India, anaemia affects an estimated 50% of the population. The problem becomes more severe as more women are affected with it as compared to men [11].In our study also the overall prevalence of anemia is 45.6%.In that female are more affected when compared to male. In neighboring India, one in every two women suffers from anaemia prevalence is 20-30.9% of general population it is considered as a moderate public health problem by WHO. In our study prevalence of anaemia is 45.6% which is higher than the global prevalence.

In India, the prevalence of anaemia is high because of low dietary intake, poor iron (less than 20 mg /day) and folic acid intake (less than 70 micrograms/day); poor bio-availability of iron (3-4 percent only) in phytate rich Indian diet; and chronic blood loss due to infection such as malaria and hookworm infestations. The low dietary intake of iron and folic acid coupled with poor bioavailability of iron is the major factor responsible for very high prevalence of anaemia in the country.[7,8]

Screening for anaemia, treatment of anaemic patients, and availability of food fortification (wheat flour with iron and folic acid), milk sugar and salt with iron to build long term iron stores remains the key to reduce anaemia. Even cooking in cast iron utensils improves iron content in diet.[15]

Previous studies noticed that demographic characteristics, such as age and levels of education, occupation were associated with the prevalence of severe anemia.[9,10] And also moderate and severe anaemia is seen in even among educated families and the higher income group.[12] In our study the prevalence of anemia was high among the people belongs to upper lower status(12.2%) according to Modified Kuppusamy's scale.

Previous studies noticed that anaemia is one of the most important health problems among women from 15 to 49 years of age in the world, and especially in developing countries.[13] In this study the female aged between 15-49years (Reproductive age) are more prone to the anemia (45.2%).

According to WHO classification of anemia, anemia is defined as the hemoglobin level less than12 g/dl in female. Mild anemia is defined as hemoglobin level of 11-11.9g/dl, moderate anemia as hemoglobin level of 8-10.9 g/dl and severe anemia was defined as hemoglobin level of less than 8g/dl among females. In this study 29.7% females belongs to mild anemia and 25.3% female belongs to moderate anaemia and then 3.8% of female belongs to severe anemia.

CONCLUSION:

This cross sectional study revealed that the overall prevalence of anaemia is 45.6%. Thus female are more affected when compared to male. The females aged between 15-49 years are more prone to the anaemia (45.2%) and most of the female (29.7%) belongs to mild anaemia. The prevalence of anaemia was high among the people belongs to upper lower status (12.2%)

The results of this study can be used to design target interventions aimed at reducing the prevalence of anemia in NIS OPD and to help conduct the interactive educational programs to improve disease awareness in female patients especially. And further studies are needed for clarify prevalence and etiology of anaemia in school going children (Below 13 years) at NIS OPD.

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