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**A Study on Socio Demographic Profile and Prevalence of Anaemia in Pregnant Women in Urban Slums of Tumkur City, Karnataka**Waseem Anjum<sup>1</sup>, Narayana Swamy D M<sup>2</sup>, Nagabhushan S R<sup>3</sup>, Ahmedi Fathima<sup>4</sup>, Naveed Abrar<sup>5</sup>

**Affiliation:** 1Assistant Professor, Department of Community Medicine, Sri Devaraj Urs Medical College, SDUAHER, Tamaka, Kolar. 2Statistician, BGS Global Institute of Medical Sciences, Bangalore. 3Medical Officer, Urban Health Centre Kuripalya, 4Assistant Professor, Department of Anaesthesiology, Sri Devaraj Urs Medical College, Tamaka, Kolar. 5 Junior Consultant, Department of Anaesthesiology, Sparsh Hospital, Bangalore.

**\*Author for correspondence:** Dr. Waseem Anjum, Assistant Professor, Department of Community Medicine, Sri Devaraj Urs Medical College, SDUAHER, Tamaka, Kolar, Karnataka. E mail: drwazanjum@gmail.com

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**ABSTRACT**

**Background:** Anemia is a global public health problem, as compelling and harmful as epidemics of infectious diseases. In pregnancy, anaemia has a significant impact on the health of fetus as well as that of mother. It is one of the leading causes responsible for maternal and perinatal morbidity and mortality. Combating anemia during pregnancy has far reaching benefits in terms of safe motherhood and healthier future generations. **Materials and Methods:** A community based descriptive cross-sectional study was conducted among 144 pregnant mothers aged above 18 years and beyond 12 weeks of amenorrhea reporting to antenatal clinic of the Urban Health Centre, Kuripalya of urban slum in Tumkur city. A pre-tested, pre-designed questionnaire was used to record information. It includes socio-demographic variables, Physical examination, Systemic examination, Hemoglobin estimation. Several social factors like age, religion, literacy level, occupation, type of family, gravida status, para status and birth interval contributing to the severity of anemia were studied. **Results:** Prevalence of anemia in the present study was 66%. Majority of the pregnant women mildly anemic (32%). The prevalence of anemia in our study was higher in age group of <25yrs, lower literacy level, low socio-economic group, Multiparous women, women with birth interval of <2yrs. A statistically significant association was seen between severity of anemia and Parity. **Conclusion:** Lower literacy level, lack of health education & awareness, inadequate nutrition due to financial constraints & inadequate utilisation of health services etc are some of the many factors leading to prevalence of anemia in the society. It is recommended to improve the quality of antenatal care in the field practice areas.

**Key word:** Pregnancy, Anaemia, Prevalence, Cross Sectional study.

**INTRODUCTION**

Pregnancy is a unique experience in every woman's life. The thought of a growing foetus in the mother's womb, indeed is nature's way of expressing the attributes of motherhood.<sup>1</sup> Anaemia is a major public health problem. It is especially prevalent in women of reproductive age, particularly during pregnancy. According to a World Health Organization (WHO) report<sup>2</sup>, the global prevalence of anemia among pregnant women is 55.9%. In India, the prevalence of anemia in pregnant women has been reported to be in the range of 33% to 89% .<sup>3-9</sup> According to NFHS-III (2005-2006) prevalence of anaemia among pregnant women in India is 58%,<sup>10</sup> which is higher as compare to the previous survey NFHS-II (1998-99) 49.7%).

The main causes of anaemia in developing countries include: inadequate intake and poor absorption of iron, malaria, hookworm infestation, diarrhoea,

HIV/AIDS and other infections, genetic disorders (e.g., sickle cell and thalassemia), blood loss during labour and delivery, heavy menstrual blood flow and closely spaced pregnancies.<sup>11, 12</sup>

Iron deficiency and anaemia during pregnancy are associated with low birth weight, preterm delivery, increased perinatal and neonatal mortality, inadequate iron stores for the newborn, increased risk of maternal morbidity and mortality, and lowered physical activity, mental concentration, and productivity.<sup>13, 14, 15</sup>

In this context of combating anemia during pregnancy, with far reaching benefits in terms of safe motherhood and healthier future generations, an attempt has been made to know the prevalence and severity of anemia among pregnant mothers and also to study the relationship between anemia and contributory social factors.

This is a community based, descriptive, cross-sectional study to know the prevalence of anemia in pregnant women aged above 18 years and beyond 12 weeks of amenorrhea, reporting to antenatal clinic of the Urban Health Centre, Kuripalya. The study was conducted during a period of 6 months from October 2016 – March 2017. A total of 144 pregnant women were examined and screened for anemia. Informed consent was obtained from each patient. Pregnant women with diabetes mellitus, systemic hypertension, pregnancy induced hypertension, bleeding disorders and those suffering from chronic systemic illnesses were excluded from the study. After registration, patients were interviewed using pretested, pre-structured questionnaire. Demographic information including age, religion, literacy level, gravida, parity and socio-economic status were documented. Socioeconomic classification suggested by modified BG Prasad classification (July 2009) <sup>16</sup> was adopted.

Anaemia in pregnancy is defined by WHO as a haemoglobin concentration below 11g/dl. The degrees of anaemia studied were mild anaemia (10–10.9 g/dL), moderate anaemia (7.0–9.9 g/dL), and severe anaemia (less than 7.0 g/dL) <sup>17</sup>. The prevalence and severity of anemia in clinical terms as mild, moderate and severe are assessed by estimating haemoglobin level among the study group by using “Color Scale for Haemoglobin” device.

Data was entered in Microsoft Excel 2013 and analysed using SPSS version 20 (trial version). Categorical data were presented as frequencies and analysed using Pearson’s Chi square test. P value of <0.05 was considered statistically significant.

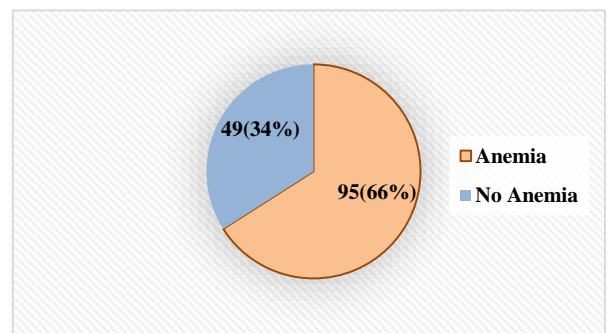
## RESULTS

The Mean ( $\pm$ SD) age of the study subjects was 23.24 $\pm$ 4years, ranging from 18 to 40 years of age. Majority of the women were in the age group of <25 years (43%). Most of the women were Muslims by religion 63 (44%). 76 (53%) women belong to Nuclear families. Housewives formed a major part of the study group 106 (74%) and employed women were hardly 12 (08%). It was observed in the study that 31% of the pregnant women were illiterate and 42% had primary education. Study group mostly comprised of class IV socioeconomic status of BG Prasad Classification (54%). Most of the study subjects were booked cases (53%). 67% of study subjects were multigravida. Birth interval of less than 2 years was seen in 56 (58%) of study subjects. In the present study, prevalence of anemia is seen in among 95 (66%) of the study subjects. Majority of the women in the study subjects were seen with mild anemia (32%), whereas moderate anemia is seen in 30% and severe anemia in 4%.

Table 2: Association of Severity of Anemia with Socio-Demographic factors

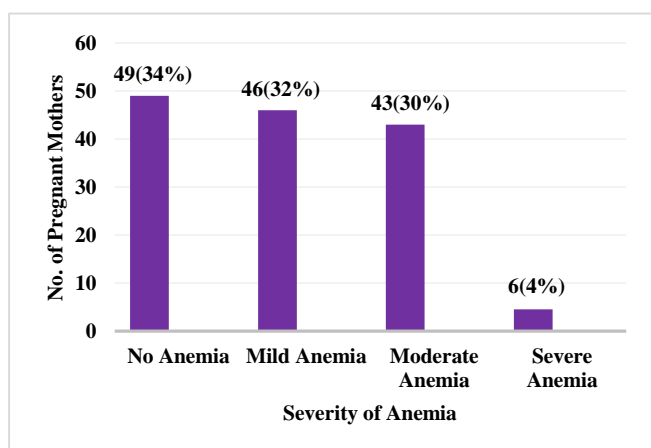
Socio Demographic Characteristics	Number of Study Subjects	Percentage (%)	
Age (Years)	<25	62	43
	26-30	48	33
	>30	34	24
Religion	Hindus	51	35
	Muslims	63	44
	Christians	13	9
	Others	17	12
	Housewife	106	74
Occupation	Service/Empl oyed	12	8
	Agriculture Labourer	26	18
	Illiterate	45	31
Literacy	Primary	60	42
	Secondary	31	22
	Graduate	8	5
Type of Family	Nuclear	77	53
	Joint	43	30
	3 Generation	24	17
Booked, Unbooked and Referred	Booked	76	53
	Unbooked	41	28
	Referred	27	19
Socio-Economic Status	Class III	40	28
	Class IV	78	54
	Class V	26	18
Gravida Status	Primi	48	33
	Multi	96	67
	0	48	33
Para Status	1	61	42
	2	27	19
	>3	8	6
Birth Interval	<2yrs	56	58
	>2yrs	40	42

Figure 1: Prevalence of Anemia among Pregnant mothers.



Socio-Demographic Characteristics		Severity of Anemia					Chi Square	p Value
		No Anemia	Mild	Moderate	Severe	Total		
Age	<25	20(32%)	21(34%)	17 (27%)	04(7%)	62(100%)	2.709	0.8444
	25-30	17(36%)	14(29%)	15(31%)	02(4%)	48(100%)		
	>30	12(35%)	11(32.5%)	11(32.5%)	0	34(100%)		
Literacy	Illiterate	09(20%)	15(33.5%)	19(42%)	02(4.5%)	45(100%)	12.12	0.2066
	Primary	20(33.5%)	19(32.5%)	18(30%)	03(5%)	60(100%)		
	Secondary	15(48.3%)	10(32.2%)	05(16.2%)	01(3.3%)	31(100%)		
Socio-Economic Status	Graduate	05(62.5%)	02(25%)	01(12.5%)	0	8 (100%)	11.24	0.08115
	III	18(45%)	12(30%)	09(22.5%)	01(2.5%)	40 (100%)		
	IV	22(28%)	24(31%)	30(38.5%)	02(2.5%)	78(100%)		
Parity	V	09(35%)	10(38%)	04(15%)	03(12%)	26(100%)	22.13	0.008463
	0	24(50%)	16(33%)	07(15%)	01(2%)	48(100%)		
	1	21(34%)	20(33%)	18(30%)	02(3%)	61(100%)		
Birth Interval	2	02(7%)	08(30%)	15(56%)	02(7%)	27(100%)	3.182	0.3644
	>3	02(25%)	02(25%)	03(37.5%)	01(12.5%)	8(100%)		
	<2years	11(20%)	18(32%)	24(43%)	03(5%)	56(100%)		
	>2years	14(35%)	12(30%)	12(30%)	02(5%)	40(100%)		

Figure 2: Distribution of Pregnant mothers on the basis of Severity of Anaemia



## DISCUSSION

In the present study, 44.2% of anemic patients were in the age group of <25yrs, 32.6% were in the age group of 25-30 & 23% of anemic patients were >35yrs of age. These findings were consistent with studies conducted by Hirematt LD et al.,<sup>18</sup> at Bagalkot Karnataka, Khandait DW et al.,<sup>19</sup> Gautam VP et al.,<sup>20</sup> at Delhi, Nadeem Ahmed et al.,<sup>21</sup> at Loni, Maharashtra.

Low socio-economic status is said to predispose to anemia, poor nutrition being the leading cause of anemia. 54% of the cases belonged to Class IV followed by 28% and 18% of cases belonging to Class III and Class V respectively. Majority of anemic patients belonged to low socioeconomic group. Findings of the present study were comparable with Rangnekar et al<sup>15</sup> in whose study 67% of anemic women belonged to low socioeconomic

group suggesting a close relationship between low socioeconomic conditions and pregnancy anemia.

It was observed in the study that 31% of the pregnant women were illiterate and 42% had primary education, while 31% had secondary education and only 5% were graduates. 80% of illiterates in the study group were anemic, whereas 66% of pregnant women with primary education had anemia. Prevalence of anemia was lesser in groups with higher education. It was observed by Thangaleela T et al<sup>22</sup> that prevalence and severity of anemia decreased as the education increased.

In present study, 53% of women were booked cases. 28% and 19% were unbooked and referred cases respectively. According to study done by Awasthi A et al.,<sup>23</sup> 83.5% were unbooked cases and study done by Rangnekar et al<sup>15</sup> 90% were unbooked cases. Regular antenatal visits can help in detection of anemia & prevent its adverse effects.

Anemia in pregnancy is more common in women of high parity due to frequent pregnancy and inadequate spacing. In the present study 67% women were multigravida and 33% primigravida which were comparable with Awasthi A et al.,<sup>23</sup> 65.5% and 34.5% in multigravida and primigravida respectively and Alli R et al.,<sup>24</sup> 74% and 26% in multigravida and primigravida respectively.

Mean spacing between births has an impact on the hemoglobin status of women. In present study, 58% of study population had spacing between pregnancy of < 2years whereas, 42 % had spacing of >2 years. It was comparable with Khandait DW et al.,<sup>19</sup> 55.9% and 44.1% in < 2 years and > 2years respectively and Tangleela et al.,<sup>22</sup> 58% and 42% in < 2 years and > 2years respectively. Prevalence of anemia was 58.3% in the study group of birth spacing of < 2years & 41.7% in the group with spacing of >2yrs. Gautam VP et.al.,<sup>20</sup> showed

that prevalence of anemia was significantly higher in women with birth interval of more than 36 months. Abbasi RM et. al.,<sup>25</sup> showed that anemia was more common in women with birth spacing between 1 to 3 years. (62%)

In the present study, prevalence of anemia is seen in among 66% of the study subjects. Majority of the women in the study subjects were seen with mild anemia (32%), whereas, moderate anemia is seen in 30% and severe anemia in 4%. Toteja GS, et al.,<sup>26</sup> in a similar study on pregnant women in 16 districts of India showed that 84.9% of pregnant women were anemic out of which 13.1% had severe anemia and 60.1% had moderate anemia. Taseer et al.,<sup>27</sup> in their study conducted in an under developed area of Sothern Punjab found out that out of 250 pregnant mothers 138 (55.2%) were anemic and out of these 83 (60.14%) and 55 (39.86%) were moderately and mildly anemic respectively. Hanmanta V Wadgav<sup>28</sup> in his study conducted in 16 villages under primary health centre, Valsang, Solapur district found that out of 827 pregnant women 764 (92.38%) were anemic out of which 328 (39.66%) were mildly anemic, 406 (49.09%) and 30 (3.63%) were moderately and severely anemic respectively.

### Conclusion

Anemia is the commonest medical disorder in pregnancy. The prevalence of anemia in our study was higher in age group of <25yrs, lower literacy level, low socio-economic group, Multiparous women, women with birth interval of <2yrs.

Lower literacy level, lack of knowledge about anemia, irrational attitude towards anemia & its prevention, lack of health education & awareness, inadequate nutrition due to financial constraints & inadequate utilisation of health services etc are some of the many factors leading to prevalence of anemia in the society.

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