Research Article

A Comparative Study on Prevalence of Anaemia among Rural & Urban Pregnant Women in a Selected Hospital of Kashmir with a View to Prepare Information Module on Prevention of Anaemia

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A B S T R A C T

Anaemia in pregnancy exists worldwide. In Jammu and Kashmir 58.7% of women are anemic compared to national average of 51.8%. 17.6% suffer from moderate anaemia compared to national average of 14.8%. The present study was aimed to compare the prevalence of anaemia among rural (50) and urban (50) pregnant subjects using descriptive comparative survey design. Purposive sampling technique was used for data collection. The study found mild anaemia (98%) among rural and (100%) among urban subjects. Moderate anaemia was found (2%) only among rural subjects. Both urban and rural pregnant subjects had significant association of nutritional status with socioeconomic status.

Keywords: Anaemia, Prevalence, Pregnant, Rural, Urban, Socioeconomic Status

Introduction

Anaemia is defined as the condition in which there is decreased level of hemoglobin than the normal or there is decreased number of RBC's than the normal value. WHO has defined anaemia during pregnancy as hemoglobin concentration of less than 11 gm% and a hematocrit of less than 33%. In a study conducted by Bala[1] and according to WHO in developing countries the prevalence of anaemia among pregnant women averages 56% that is ranging between 35-100% among different regions of the world. India reported the prevalence to be between 33% to 100%. About 60% of all pregnant women in developing countries all over the world have anaemia, out of which 40% of maternal deaths are related to anaemia.

Sharma V[2] conducted a cross sectional study in rural area of RS Pora block of district Jammu under the department of community medicine Government Medical College Jammu on 427 females. They found prevalence of anaemia was 90.97%. Of this 32.64% were mildly anemic, 56.59% were moderately anemic, and 1.74% were severely anemic. They concluded that prevalence of nutritional anaemia was high (70.49%) among the study group.

Iron deficiency is a serious problem in Jammu and Kashmir. Studies have reported that nutritional deficiency is

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particularly a serious problem for young women. 26% of women in Jammu and Kashmir are undernourished. Overall 59% of women in J and K have some degree of anaemia and 20% are moderately to severely anemic.[3]

In the clinical area the investigator observed that pre-existing anemia is further compromised by multigravidity and insufficient-dietary intake among both rural and urban pregnant women, which has an effect on their health and outcome of pregnancy. Therefore the investigator conducted a study to compare the anemic pregnant women of rural and urban areas of Kashmir and compare their hemoglobin level at 12 weeks, 20 weeks, 28 weeks and 36 weeks based on record analysis in order to elicit prevalence of anaemia in this particular group of women.

Materials and Methods

A descriptive comparative survey design was used to conduct study in maternity outpatient department of SKIMS district Srinagar on 100 pregnant subjects (50 rural/ 50 urban). Purposive sampling technique was used for sample collection and self structured interview schedule for data collection. An interview schedule was used to collect data regarding demographic characteristics, nutritional status and obstetrical clinical information of study subjects. Assessment Proforma was used for record analysis at 12 weeks, 20 weeks, 28 weeks and 36 weeks of gestation. Data was collected from March 2014 to April 2014. Data collection time was scheduled from 10 to 1PM. Every day 4 to 5 subjects were interviewed individually for 20 to 30 minutes.

Result

In conclusion the data of the predetermined study revealed the following results.

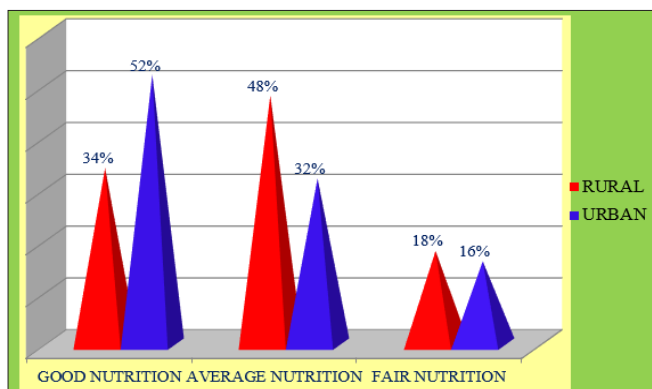## Section 1: Description of Demographic Characteristics

Figure 1.Cone diagram showing percentage distribution of rural and urban subjects according to nutritional status

Out of 100 pregnant women majority of rural study subjects (76%) were in the age group of 20 to 30 years. Among urban pregnant subjects (50%) were in the age group of 20 to 30 years and >30 years respectively. Among rural pregnant subjects (54%) were primigravida, 30% were only multigravida. Among urban pregnant subjects both primigravida and multigravida were only (40%) in each group respectively. Regarding socioeconomic status (46%) of rural pregnant subjects belonged to middle income group and (40%) belonged to lower income group. Among urban pregnant subjects (52%) belonged to middle income group and (26%) belonged to lower income group.

Section 2: Comparative Distribution of Rural and Urban Subjects According to Nutritional Status

Comparative Distribution of Rural and Urban Subjects According to Consumption of Iron and Folic Acid and Reason for not taking
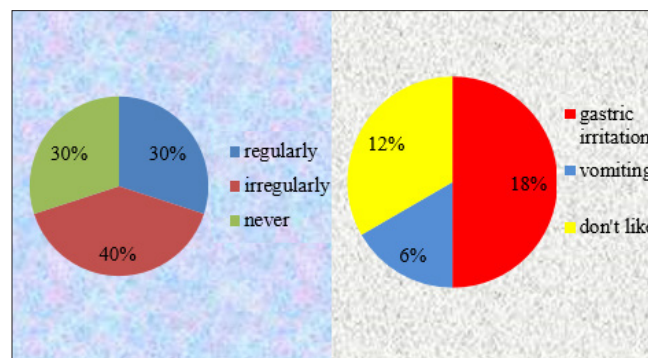
Figure 2.Pie chart showing consumption of iron and folic acid and reason for not taking among rural subjects

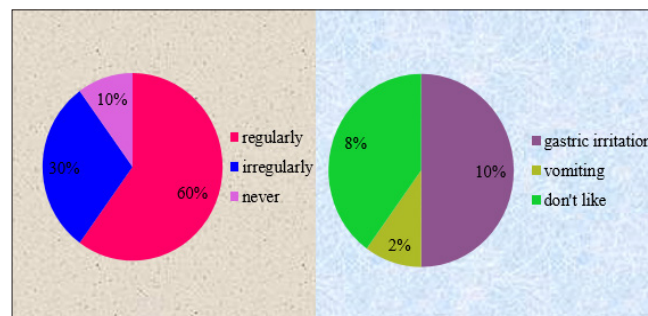**Figure 3.Pie chart showing consumption of iron and folic acid and reason for not taking among urban subjects**

Section 3: Comparative Distribution of Subjects According to Obstetrical and Clinical Information

Findings in the Table 1, revealed mild anaemia among 98% of rural and 100% of urban pregnant subjects. Moderate anaemia was 2% only among rural pregnant subjects.

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Table 1.Findings of rural and urban pregnant subjects according to physical and physiological measures

[N (n1 + n2) = 100]

Variables		n1 = 50		n2 = 50	
		Rural subjects		Urban subjects	
Anaemia grading	Sub-items of variables	f	%	f	%
Mild (10-10.9 gms/dl)	Mild anaemia	49	98%	50	100%
Moderate (7.09.9 gm/dl)	Moderate anaemia	1	2%	0	0
Severe (<7 gem /dl)	Severe anaemia	0	0	0	0
Urine examination	Normal urine	47	94%	50	100%
	Albumin in urine	0	0%	0	0
	Puss cells in urine	3	6%	0	0
Oedema	Puffy face	10	20%	8	16%
	legs	0	0	0	0
	feet	0	0	0	0
Pallor	Conjunctiva	6	12%	4	8%
	Dorsum of the tongue	0	0	0	0
	Nails	20	40%	12	24%
Status of mother	General weakness	15	30%	10	20%
	Fatigue	10	20%	8	16%
	Shortness of breath on exertion	11	22%	8	16%
Foetal heart rate	Normal (120-160 b/mt)	50	100%	50	100%
	Tachycardia (>1b/mt)	0	0	0	0
	Bradycardia (<12b/mt)	0	0	0	0

Section 4: Comparative Distribution of Subjects as per their Grades of Anaemia at Various Weeks of Gestation

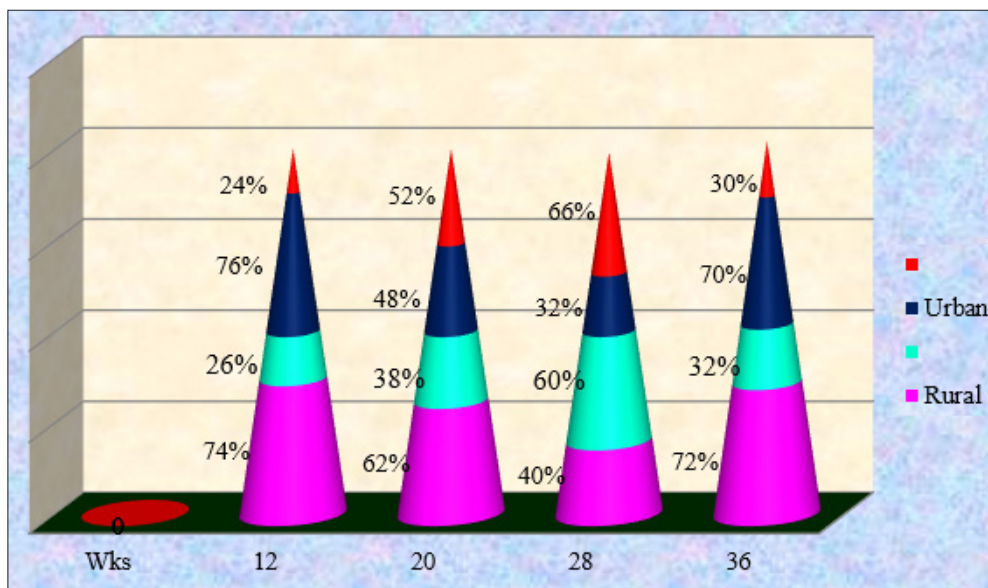**Figure 4.Cone diagram showing percentage distribution of anaemia grades of rural and urban subjects at various weeks of gestation**

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Section 5: Association of Nutritional Status of Rural and Urban Subjects with Selected Demographic Variables

Table 2.Findings related to Association of Nutritional Status of Rural and Urban Subjects with Selected Demographic Variables

[N (n1+ n2) =100]

Rural subjects				n1 = 50		Urban subjects				n2 = 50	
	Age in Years						Age in Years				
Nutritional status	<20	20-30	>30	P- value	Sig.	Nutritional status	<20	20-30	>30	P-value	Sig.
Good	0	8	1	0.494	NS	Good	0	10	9	0.494	NS
Average	1	23	6			Average	0	10	11		
Fair	2	7	2			Fair	0	5	5		
Nutritional status	Gravida					Nutritional status	Gravida				
Good	6	0	3	0.306	NS	Good	10	3	6	0.558	NS
Average	16	4	10			Average	8	4	9		
Fair	5	4	2			Fair	2	3	5		

NS: Not Significant (P > 0.05) at 0.05% level of significance.

Table 3.Findings related to Association of Nutritional Status of Type of Family with Socio-Economic Status among Rural and Urban Subjects

[N (n1+ n2) =100]

	Nutritional status	Type of Family		n 1 = 50		Socio Economic Status			n 2 = 50	
		Nuclear	Joint	P-value	Sig	High income	Low income	Middle income	P-value	Sig
Rural subjects	Good	1	8			4	5	0		
	Average	10	20	0.56	NS	3	13	14	0.012	S
	Fair	3	8			0	5	6		
Urban subjects	Good	8	11			7	2	10		
	Average	7	14	0.658	NS	1	9	11	0.042	S
	Fair	5	5			3	2	5		

NS: Not Significant (P > 0.05) at 0.05% level of significance; S: Significant (P < 0.05) at 0.05% level of significance.

Findings in the Table 2, revealed no significant association of nutritional status with selected demographic variables (age in years P = 0.0494 among both rural and urban pregnant subjects) and gravidity P = 0.306 among rural and P = 0.558 among urban Subjects).

Findings in the Table 3, revealed significant association of nutritional status only with socioeconomic status among both rural (P = 0.012) and urban (P = 0.042) pregnant subjects.

Comparison of Hemoglobin among Rural and Urban Pregnant Subjects at Various Weeks of Gestation
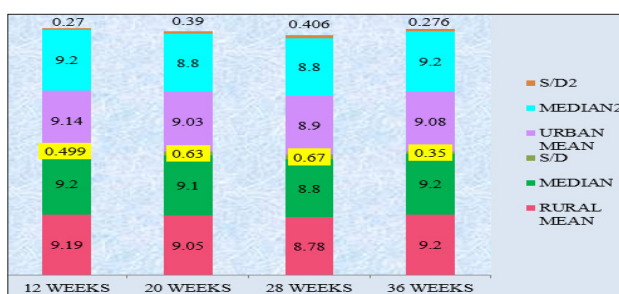

Figure 5.Cyndrical diagram representing comparison of hemoglobin among rural and urban pregnant subjects at various weeks of gestation

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Section 6: Association of Anaemia at 12 Weeks of Gestation among Rural and Urban subjects with Selected Demographic Variables

Table 4.Findings related to association of anaemia at 12 weeks of gestation among rural and urban subjects with selected demographic variables

[N (n1+ n2) = 100]

Rural subjects				n 1= 50		Urban subjects				n2 = 50	
Anaemia at 12 weeks of gestation	Age in Years			P-value	Sig.	Anaemia at 12 weeks of gestation	Age in Years			P-value	Sig.
	<20	20-30	>30				<20	20-30	>30		
Mild	3	38	8	0.240	NS	Mild	0	25	25	0.180	NS
Moderate	0	0	1			Moderate	0	0	0		
Severe	0	0	0			Severe	0	0	0		
Anaemia at 12 weeks of gestation	Gravida					Anaemia at 12 weeks of gestation	Gravida				
	Primi	2nd gravida	Multi Gravida				Primi	2nd gravida	Multi Gravida		
Mild	27	8	14	0.460	NS	Mild	20	10	20	0.30	NS
Moderate	0	0	1			Moderate	0	0	0		
Anaemia at 12 weeks of gestation	Socio- Economic Status					Anaemia at 12 weeks of gestation	Socio- Economic Status				
	High Income	Middle Income	Low Income				High Income	Middle Income	Low Income		
Mild	7	22	20	1.00	NS	Mild	11	26	13	1.30	NS
Moderate	0	1	0			Moderate	0	0	0		
Anaemia at 12 weeks of gestation	Type of Family					Anaemia at 12 weeks of gestation	Type of Family				
	Nuclear	Joint					Nuclear	Joint			
Mild	13	36		0.280	NS	Mild	20	0		0.340	NS
Moderate	1	0				Moderate	30	0			

NS: Not significant (P > 0.05) at 0.05% level of significance.

Findings in the Table 4 did not reveal any significant association of anaemia at 12 weeks of gestation with any of the demographic variables.

Findings in the Table 5 did not reveal any significant association of anaemia at 12 weeks of gestation with nutritional status among both rural and urban pregnant subjects.

Table 5.Findings related to association of anaemia at 12 weeks of gestation among rural and urban subjects with nutritional status

[N (n1 + n 2) = 100]

Rural			n1 = 50		Urban			n2 = 50	
Nutritional status	Mild anaemia	Moderate anaemia	P-value	Sig.	Nutritional status	Mild anaemia	Moderate anaemia	P-value	Sig.
Good	9	0			Good	19	0		
Average	29	1	1.126	NS	Average	21	0	1.198	NS
Fair	11	0			Fair	10	0		

NS: Not significant (P > 0.05) at 0.05% level of significance.

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Discussion

The study found Prevalence of anaemia among both rural and urban pregnant subjects. Results showed that prevalence of anaemia had no relation with age, parity and type of family. These findings were supported by Bhargavi et al.[4], and Judit A[5] who found prevalence of anaemia among rural and urban pregnant subjects without any relation of anaemia with age, parity, and type of family among the study subjects. Regarding socioeconomic status the study found mild anaemia among all the study subjects belonging to high income group, middle income group and fair income group. Similar findings were supported by the study done by Ibrahim et al.[6] and Haldar[7] in their study they have reported prevalence of anaemia among pregnant subjects belonging to same income groups respectively. Regarding consumption of iron supplements 40% of rural and 30% of urban pregnant subjects reported irregular consumption of iron supplements and regular consumption of supplements was reported by majority of urban subjects only. The reason for not taking supplements included gastric irritation (18%), (10%) among both rural and urban subjects respectively. These findings are supported by the study done by Chandra8who found that 59.68% took IFA tablets and 40.32% did not take. Among 74 subjects who received IFA tablets, only (70.27%) pregnant women took the tablets regularly and remaining 29.73% took the tablets irregularly. The study found that 98% of rural subjects had mild anaemia and 2% had moderate anaemia. Among Urban, 100% of pregnant subjects had mild anaemia only. These findings are supported by Barbin et al.[9] who found 10.4% of pregnant subjects had mild anaemia, 4.2% had moderate anaemia and 0.3% had severe anaemia. Regarding anaemia at various weeks of gestation the study found 74% of rural subjects had mild anaemia at 12 weeks, 62% at 20 weeks and 72% at 36 weeks Among urban subjects 76% had mild anaemia at 12 weeks and 70% had at 36 weeks of gestation respectively. Moderate anaemia was found in 60 % of rural subjects and 66% of urban subjects at 28 weeks of gestation respectively. Severe anaemia was not observed in any pregnant subject. These findings are supported by the study done by Mafiana et al.[10] who found 44.6% prevalence of anaemia among those subjects who registered in the 1st trimester, 64.4% in the 2nd trimester and 64.6% in the 3rd trimester P = < 0.05.The study did not find any significant association of nutritional status with age and gravidity among both rural and urban pregnant subjects These findings are supported by the study done by Madhavi et al.,[11] they have reported that prevalence of anaemia was not statistically significant with relation to age of women P > 0.05, and parity also did not show any significant relation with anaemia Similarly association of nutritional status with type of family among both rural and pregnant urban subjects was not found significant P = 0.56 / P = > 0.658. These findings are further supported by Judith et al.[12] who found that there was no significant association of nutritional status with type of family both among rural and urban pregnant subjects. But association of nutritional status with socioeconomic status among both rural and urban pregnant subjects was found significant P = 0.012/ P = 0.042. These findings are supported by the study done by Mehta et al.[13] who also found significant association of nutritional status with socioeconomic status among both rural and urban pregnant subjects. Regarding association of Haemoglobin the study did not find any significant association of anaemia at 12 weeks of gestation with all the selected variables among rural and urban study subjects. These findings are supported by Mehta[13] who also did not find any significant association of anaemia with age, parity, type of family and socioeconomic status among both rural and urban pregnant subjects. Regarding association of anaemia at 12 weeks of gestation the study did not find any significant association of mild and moderate anaemia with nutritional status among both rural and urban pregnant subjects. These findings are supported by Ibrahim SA et al6.who also did not find any significant association of mild and moderate anaemia with nutritional status among both rural and urban pregnant subjects.

Conclusion

The burden of anaemia during pregnancy posses a great threat to the life of both mother and baby. The findings of the present study revealed highest association of nutritional status with socioeconomic status among both rural and urban pregnant subjects. It is found that supplementation alone does not overcome the burden of anaemia among this vulnerable group but it should be supported with verbal information, discussion, and written information about easily available and affordable foods. It also indicates that due to shortage of nursing staff in overcrowded ante- natal clinics concerns this high risk group cannot be addressed which may be probably due to posting of one staff in ante-natal clinics that remains busy in giving immunization and iron infusion.

Conflict of Interest: None

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