

Short Communication

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Prevalence of iron deficiency anaemia among postpartum mothers at Kallandiri PHC, Madurai

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ABSTRACT

Mothers are fostering the future citizens of our societies. Anaemia is the world's second leading cause of disability and thus one of the most serious global public health problems. However, the problem of anaemia in postpartum is far more prevalent in the developing countries. Early diagnosis and identifying the possible risk factors are helpful to manage Post Partum Anaemia in time before further complications developed. A study is designed to find out the level of iron deficiency anaemia among Postpartum mothers in selected Primary Health Centre, Madurai and to find out the association between their selected demographic variables and baseline variables. A quantitative research approach and non- experimental (descriptive) research design were used to gather data from 100 Postpartum mothers using consecutive sampling technique. Self- structured questionnaires were used to collect information during interview and blood is collected for biochemical analysis of haemoglobin among Postpartum mothers. Data was analysed and interpreted and the results were derived. The study findings revealed that majority of the subjects 64 (64%) were having moderate anaemia, 26 (26%) were having mild anaemia 10 (10%) were having non anaemia and none of them having severe anaemia. There is statistically significant association between age ($\chi^2=9.66$, $p=0.05$), educational qualification ($\chi^2=13.91$, $p=0.05$), haemoglobin level at Antenatal period ($\chi^2=14.35$, $p=0.01$) and prevalence of iron deficiency anaemia among postnatal mothers at Kallandiri PHC, Madurai. Statistical significance was calculated using the Chi-square test. The study findings concluded that majority of Postpartum mothers are anaemic. Therefore, health awareness programmes can be conducted to create awareness among rural postnatal mothers regarding importance of iron rich diet and complications of anaemia.

Keywords: Prevalence, Iron deficiency anaemia, Postpartum mothers, Statistical significance, Chi-square test

INTRODUCTION

Women's health differs from that of men by many unique ways. Women's health is an example of population health. For a woman's and her baby's short and long-term health and wellbeing, the postpartum period is crucial. Iron-deficiency anemia is mostly caused by insufficient dietary iron intake or poor absorption of iron from diets. The most common cause of anemia worldwide is believed to

be iron deficiency. The prevalence of anaemia among postnatal mothers in developed countries ranges from 10% to 30% and in developing countries 50% to 80%. The World Health Organization has reported that anaemia contributes to 324,000 deaths and 12,500,000 disability adjusted life years in southeast Asia in India, the prevalence of anemia is 52%. In 2011, rural area at Thiruvallur district, eighty-one percent of nursing moms who give birth within six months have anemia.

Postpartum anaemia remains a persistent and severe public health issue in many parts of the world. The factors that contribute to postpartum anemia are young maternal age, low educational status of the mother, the mode of delivery, poor antenatal care and poor nutritional status. To avoid complications early diagnosis and identifying the factors that relate to anemia will promote reproductive health and the well-being of the mother and child.

One of the primary tasks for promoting community health is to study and identify the incidence of such anemia and institute proper guidelines to handle the health of pregnant mothers. The present preliminary study is carried out to identify prevalence of postpartum anemia in a primary health center created to protect and promote reproductive health in the community.

METHODS

A non-experimental (descriptive) design was used to assess the level of iron deficiency anaemia among postpartum mothers at Kallandiri Primary Health Centre during the month of August 2023. In the present study 100 postpartum mothers who attended Kallandiri PHC were used as the study samples. Non-probability Consecutive sampling technique was used for the present study.

After formal administrative permission was obtained and the ethical clearance, a pilot study was conducted. Mothers who were available during the study period and willing to participate were included in the study. Mothers who were not willing to participate were excluded from the study. Informed consent was obtained from the mothers after explaining the purpose of the study. Self-structured questionnaires including demographic data and baseline data were used to collect data.

Blood hemoglobin levels were estimated by standard method and the grading of anemia was done based on WHO guidelines for the classification of anemia as mild, moderate and severe anemia.

Statistical analysis

The obtained data was analyzed using Microsoft Excel and SPSS packages. Results were presented in the form of Tables and Figures. Chi-square test are applied wherever necessary.

RESULTS

The study results showed that the majority of the subjects, 92% were in the age group between 20- 34 years, 39% were studied up to graduate and postgraduate levels, 61% were living in joint family set up, 51% were from upper lower class, 99% were married, 96% were nonvegetarian (Table 1). In baseline variables, majority of the subjects, 89% were eating vegetables daily, 55% were eating green leafy vegetables weekly once, 43% were consumed fruits daily, 88% were having menstrual cycle once a month,

89% were having 3-5 days menstrual flow, 56% were having dysmenorrhoea, 60% were married at the age of 20-34 years, 78% were in the age of 20-34 years at first conception, 40% were primi mothers, 43% were having one delivery, 54% were having two or more than two live births, 82% were not having abortion, 96% were not having stillbirth, 40% were having no interval between pregnancy (Primipara), 100% were having 6 and above antenatal visits in antenatal period, 48% were having haemoglobin level more than 11 g/dl.

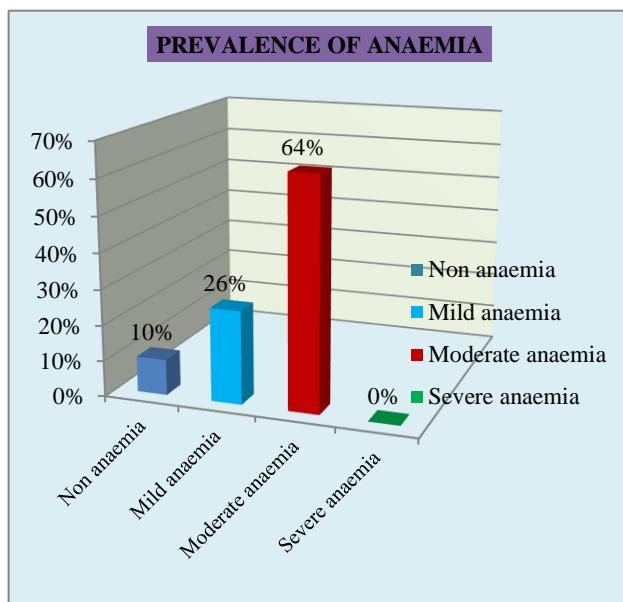


Figure 1: Prevalence of iron deficiency anaemia.

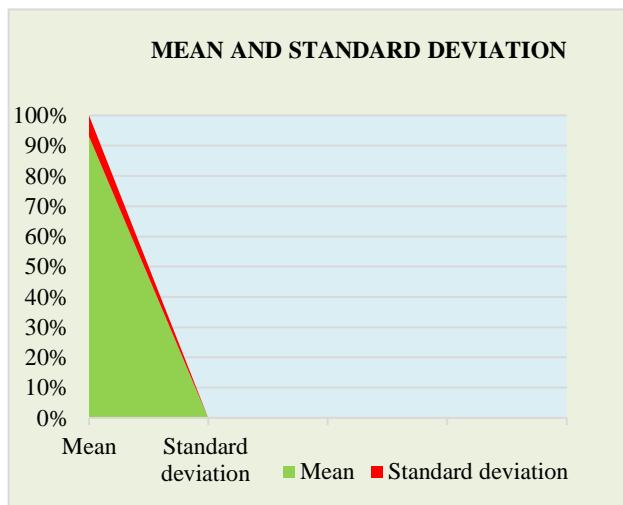


Figure 2: Area diagram with mean and standard deviation of prevalence of iron deficiency anaemia.

During antenatal period, 76% were deworming done once in pregnancy, 91% were taken Iron folic acid tablets regularly at pregnancy, 48% were not received Iron sucrose infusion during antenatal period, 93% were not received blood transfusion during antenatal period, 96% were gained source of information regarding anaemia

from Medical professionals, 67% were having normal delivery, 80% were delivered in Government hospitals, 76% were started breastfeeding within one hour of delivery, 94% were giving exclusive breast feeding, 66% were taking Iron folic acid tablets regularly in postnatal period. (Table 2). According to the prevalence of iron deficiency anaemia among Postpartum mothers, majority of the subjects 64 (64%) were having moderate anaemia, 26 (26%) were having mild anaemia, 10 (10%) were having non anaemia and none of them having severe

anaemia. (Figure 1). The mean value of prevalence of iron deficiency anaemia among postnatal mothers was 10.59 with standard deviation of 1.52. (Figure 2). Chi square test revealed that there is statistically significant association between the age (i.e., 20-34 years), educational qualification (i.e., Non formal education), level of haemoglobin in antenatal period (i.e., 7-8.9 g/dl.), were statistically significant association between prevalence of iron deficiency anaemia among postpartum mothers.

Table 1: Association of prevalence of iron deficiency anaemia postpartum mothers with their selected socio demographic variables.

S. no.	Sociodemographic variables	Level of anaemia						df	χ^2	P value
		Non anaemia		Mild		Moderate				
		N	%	N	%	N	%			
Age (in years)										
1.	Less than 20	2	28.6	2	28.6	3	42.8	4	9.66	0.05* (S)
	20- 34	8	8.7	23	25	61	66.3			
	More than 34	0	0	1	100	0	0			
Religion										
2.	Hindu	9	9.8	24	26.1	59	64.1	4	3.03	0.55 (NS)
	Christian	0	0	1	100	0	0			
	Muslim	1	14.4	1	14.3	5	71.4			
Educational qualification										
3.	Non formal education	0	0	0	0	1	100	6	13.91	0.05* (S)
	Primary education	4	18.2	5	22.7	13	59.1			
	Higher secondary education	3	7.9	12	31.6	23	60.5			
	Graduate and post graduate	3	7.7	9	23.1	27	69			
Type of family										
4.	Nuclear family	1	2.8	11	30.6	24	66.7	4	0.44	0.96 (NS)
	Joint family	9	14.8	14	22.9	38	62.3			
	Extended family	0	0	1	33.3	2	66.7			
Socio economic status										
5.	Upper class	0	0	0	0	0	0	8	1.63	0.80 (NS)
	Upper middle class	2	40	0	0	3	60			
	Lower Middle class	2	4.9	15	36.6	24	58.5			
	Upper lower class	6	11.8	10	19.6	35	68.6			
	Lower class	0	0	1	33.3	2	66.7			
Marital status										
6.	Married	10	10.1	26	26.3	63	63.6	2	0.44	0.80 (NS)
	Separated	0	0	0	0	1	100			
	Widow	0	0	0	0	0	0			
	Unmarried	0	0	0	0	0	0			
Diet habits										
7.	Vegetarian	1	25	2	50	1	25	2	2.01	0.36 (NS)
	Nonvegetarian	9	9.4	24	25	63	65.6			

p<0.05, NS-Not significant, *S-Significant.

Table 2: Association of prevalence of iron deficiency anaemia postpartum mothers with their baseline variable.

S. no.	Baseline variables	Level of anaemia						df	χ^2	P value
		Non anaemia		Mild		Moderate				
		N	%	N	%	N	%			
How often include vegetables in the diet										
1	Daily	7	7.9	24	26.9	58	65.2	4	7.06	0.13 (NS)
	Alternate days	3	33.3	2	22.2	4	44.4			

Continued.

S. no.	Baseline variables	Level of anaemia						df	χ^2	P value
		Non anaemia		Mild		Moderate				
		N	%	N	%	N	%			
2	Once a week	0	0	0	0	2	100			
	How often include green leafy vegetables									
	Daily	1	25	0	0	3	75			
	Alternate days	4	9.8	11	26.8	26	63.4	4	2.11	0.75 (NS)
3	Once a week	5	9	15	27.4	35	63.6			
	How often pursued whole fruits									
	Daily	4	9.3	9	20.9	30	69.8			
	Alternate days	3	7.5	11	27.5	26	65	4	3.28	0.51 (NS)
4	Once a week	3	17.6	6	35.3	8	47.1			
	Frequency of menstrual cycle									
	Once a month	10	11.4	21	23.8	57	64.8			
	twice in a month	0	0	0	0	1	100	4	5.02	0.28 (NS)
5	more than one month	0	0	5	45.5	6	54.5			
	Duration of blood flow (days)									
	Less than 3	0	0	1	25	3	75			
	3-5	9	10.1	23	25.8	57	64.1	4	0.67	0.95 (NS)
6	More than 5	1	14.3	2	28.6	4	57.1			
	Dysmenorrhea									
	Present	4	7.2	18	32.1	34	60.7			
	Not present	6	16.7	5	3.9	25	69.4	4	6.37	0.17 (NS)
7	Occasionally	0	0	3	37.5	5	62.5			
	Age at marriage									
	Less than 20 years	4	10	13	32.5	23	57.5			
	20- 34yrs	6	10	13	21.7	41	68.3	2	1.52	0.46 (NS)
8	More than 34 years	0	0	0	0	0	0			
	Age at first conception									
	Less than 20 years	3	13.6	8	36.4	11	50			
	20- 34yrs	7	9	18	23.1	53	67.9	2	2.40	0.30 (NS)
9	More than 34 years	0	0	0	0	0	0			
	No. of conception									
	One	5	12.5	10	25	25	62.5			
	Two	3	8.8	10	29.4	21	61.8	4	0.84	0.93 (NS)
10	More than two	2	7.7	6	33.1	18	69.2			
	No. of deliveries									
	One	5	11.6	11	25.6	27	62.8			
	Two	4	10.8	12	32.4	21	56.8	4	3.27	0.51 (NS)
11	More than two	1	5	3	15	16	80			
	No. of live birth									
	None	0	0	0	0	1	100			
	One	6	13.3	121	26.7	27	60	4	1.60	0.80 (NS)
12	Two or more than two	4	7.4	4	25.9	36	66.7			
	No of Abortion									
	One	1	7.1	5	35.8	8	57.1			
	Two	0	0	2	50	2	50	4	2.51	0.64 (NS)
13	None	9	11	19	23.2	54	65.8			
	No. of stillbirth									
	One	0	0	1	50	1	50			
	Two	0	0	1	50	1	50	4	1.46	0.83 (NS)
14	None	10	10.4	24	25	62	64.6			
	Interval between pregnancy									
	None	5	12.5	10	25	25	62.5	4	0.63	0.96 (NS)
	1- 3years	3	7.7	11	28.2	25	64.1			

Continued.

S. no.	Baseline variables	Level of anaemia						df	χ^2	P value
		Non anaemia		Mild		Moderate				
		N	%	N	%	N	%			
15	More than 3 years	2	9.5	5	23.8	14	66.7			
	No. of AN visit during AN period									
	Less than 3	0	0	0	0	0	0			
16	3-5	0	0	0	0	0	0	2	0	1.00 (NS)
	6 and above	10	10	26	26	64	64			
	Level of haemoglobin in AN period									
17	<7	0	0	0	0	0	0			
	7-8.9	0	0	3	13.6	19	86.4	4	14.35	0.01** (S)
	9-10.9	2	6.6	5	16.7	23	76.7			
18	≥ 11	8	16.7	18	37.5	22	45.8			
	Deworming done at regular intervals									
	Once	9	11.8	18	23.7	49	64.5	4	2.02	0.73 (NS)
19	Twice	1	6.3	5	31.3	10	62.5			
	None	0	0	3	37.5	5	62.5			
	Whether you have taken IFA tablet during antenatal period									
20	Regular	10	11	23	25.3	58	63.7			
	Irregular	0	0	3	33.3	6	66.7	2	1.20	0.50 (NS)
	Not taken	0	0	0	0	0	0			
21	Iron sucrose infusion received									
	One course	4	9.8	13	31.7	24	58.5			
	More than one course	2	18.2	1	9.1	8	72.7	2	2.99	0.55 (NS)
22	None	4	8.3	12	25	32	66.7			
	Any blood transfusion given									
	Once	1	14.2	3	42.9	3	42.9			
23	More than one time	0	0	0	0	0	0	2	1.49	0.47 (NS)
	None	9	9.7	23	24.7	61	65.6			
	Source of information regarding anaemia									
24	Medical professionals	10	10.5	25	26	61	63.5			
	Family	0	0	0	0	0	0	2	0.49	0.77 (NS)
	Media	0	0	1	25	3	75			
25	Type of delivery									
	Normal	6	9	14	20.9	47	70.1			
	LSCS	4	12.1	12	36.4	17	51.5	2	3.46	0.18 (NS)
26	Forceps	0	0	0	0	0	0			
	Place of delivery									
	Government hospital	9	11.3	18	22.5	53	66.3			
27	Private hospital	1	5	8	40	11	55	2	2.83	0.24 (NS)
	Home delivery	0	0	0	0	0	0			
	When breast feeding started									
28	within one hour	9	11.8	18	23.7	49	64.5			
	More than one hour	0	0	2	28.6	5	71.4	4	2.12	0.71 (NS)
	Not given within two hours	1	5.9	6	35.3	10	58.8			
29	Status of breastfeeding									
	Exclusive breast feeding	10	10.6	22	23.4	62	66			
	Breast feeding and formula feeding	0	0	4	80	1	20	4	8.52	0.08 (NS)
30	Not giving	0	0	0	0	1	100			
	Whether taking prescribed iron folic acid tablet									
	Regular	8	12.1	17	25.8	41	62.1	4	1.63	0.80 (NS)
31	Irregular	0	0	3	33.3	6	66.7			
	Not taken	2	8	6	24	17	68			

*Significant at $p < 0.05$, **Highly significant at $p < 0.01$, NS = Non-significant.

DISCUSSION

In the findings of present study, the prevalence of iron deficiency anaemia among Postpartum mothers, 90% were having anaemia, 10% were having non anaemia.

The present study is supported by Dr. Geetha. There is statistically significant association between 20-34 years of age, non-formal education, anaemia in antenatal period with the prevalence of iron deficiency anaemia among postnatal mothers with their selected socio demographic variables and baseline variables.

CONCLUSION

The study findings revealed that among 100 samples, 90% postpartum mothers were anaemic. Health awareness programmes can be conducted to create awareness among rural postnatal mothers regarding importance of iron rich diet and complications of anaemia. The study's conclusions will benefit professional nurses and nursing students by enhancing their knowledge and outlook on postpartum anemia prevention and its significance to the community.

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