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Knowledge and Practices of Management and prevention of anemia in pregnancy among Mid-Level Health Care Providers of Rural Kakinada, Andhra Pradesh

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Abstract

Anaemia is a significant global health issue, particularly in developing countries, with serious consequences during pregnancy and beyond. According to WHO, 115,000 maternal deaths annually are attributed to iron deficiency anaemia. In India, 45.7% of urban and 52.1% of rural pregnant women have low haemoglobin levels. The Government of India launched Anaemia Mukt Bharat to reduce anaemia by 3% annually. Mid-Level Health Providers (MLHPs) play a crucial role in providing preventive care at Health and Wellness Centres.

Objectives: To assess the knowledge and practices of management and prevention of anemia in pregnancy among MLHP's and to determine the association between knowledge and practices with their sociodemographic profile.

Methods: A cross-sectional study was conducted among 209 MLHP's working at Health and Wellness Centres in Rural Kakinada. Data was collected by a structured questionnaire from June to July 2023. Knowledge and Practice scores were categorised as Good, Fair and Poor based on % of correct responses. Statistical analysis was performed and a p-value of <0.05 was considered as statistically significant. Institutional Ethics Committee approval was obtained priorly. **Results**: Out of 209 MLHPs, nearly half 56.5% belonged to the 22–25year age group. 93.3% were females. Most of them 77% were Hindus, 90.9% possessed a BSc Nursing degree. Nearly half i.e 50.7% had 1-2 years of experience, followed by 26.8% with 3 or more years, and 22.5% with less than 1 year of experience. About 64% had good knowledge, 33.4% had fair knowledge and only2.34% had Poor knowledge. whereas in the level of practices, only 9.5%had a good score and remaining 90.4% had fair

practice level. There was no significant association between knowledge with selected demographic variables, but in practices Gender showed significant association (x^2=6.26 P< 0.012).

Conclusion: The study revealed that significant proportion (64%) of MLHP's exhibited good knowledge and (90.4%) demonstrated fair practices. Only Gender shows significant association for practices.

Keywords: Anemia, pregnancy, Knowledge, Practices, Mid-level Health care Provider

Section 1:

Introduction: Globally, anaemia is considered a serious public health problem that particularly affects young children and pregnant women. Anaemia is one of the most common nutritional deficiency disorders affecting pregnant women; the prevalence is 14% in developed countries, 51% in developing countries, and varies from 65% to 75% in India. Anaemia in pregnancy has been associated with higher rates of maternal death, perinatal death, preterm birth, preeclampsia, low birth weight, small-for-gestational-age (SGA) live birth, and caesarean delivery. [2]. Iron deficiency anemia is defined as anemia accompanied by depleted iron stores and signs of a compromised supply of iron to the tissues. The World Health Organization has defined anemia in pregnancy as a haemoglobin value below 11 g/dl [3]. A study also showed that anemia during pregnancy contributed to 23% of indirect causes of maternal death in developing countries [4]. Due to the significant influence of anemia during pregnancy on maternal death, this condition must be treated immediately. This is also in line with one of the targets in Sustainable Development Goals (S, which aim to reduce maternal mortality to less than 70 per 100,000 live births by 2030 (5). Hence, iron supplementation in pregnancy has become a standard and routine practice as a preventive treatment for iron deficiency anemia in pregnancy [6]. The Government of India, under POSHAN Abhiyan, launched Anemia Mukt Bharat in 2018 to reduce the burden of anemia by 3% per year with key interventions like IFA supplements (IFAS), deworming, intense IEC/BCC, intake of iron-rich foods, and special focus on pregnancy. Testing and treatment, iron-rich diet and IFAS are simple preventive measures. Deworming is mandatory at the 4th month, and IFAS should be initiated from the 4th month. The Red-colored IFAS tablets are continued for 6 months in the antenatal period and also continued in the postnatal period for 6 months, with a dose of 60mg of elemental iron and folic acid 500 mcg. The two types of regimens followed in Anemia Mukt Bharat are prophylactic for those with Hb 11gm% and above with 1 tablet of IFAS and therapeutic regimen for those with > 11gms % with 2 tabs of IFAS until Hb% reached 11gm, there after prophylactic regimen to be continued. [7]

According to the World Health Organization (WHO), a mid-level healthcare provider (MLHP) is referred to as a health provider who has completed pre-service higher education and is trained, authorized, and regulated to work autonomously. The scope of practice of MLHPs includes diagnosis, management, and treatment of illness, disease, and impairments, as well as engagement in preventive and promotive care. Findings from a few studies have shown that there is evidence regarding the beneficial effects, acceptability, and feasibility of using MLHPs for pregnancy and childbirth care, communicable diseases, and non-communicable diseases in low- and middle-income countries [8]. In India, MLHPs have been introduced under the NHM in the year 2018 to provide primary health services through the Health and Wellness centres along with the team of ANMs and ASHAs. These MLHPs play a key role at Health and Wellness Centres (which are currently renamed as Ayushman Arogya

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Mandirs) [9]. Hence, the study was undertaken to assess their knowledge and practices on the management and prevention of anaemia in pregnancy.

Problem statement

"To Assess the Knowledge and Practices of Management and Prevention of Anemia in pregnancy among Mid-Level Health care Providers at Health and Wellness centers of Rural Kakinada, Andhra Pradesh"

Objectives:

- To assess the Knowledge and Practices of MLHP'S on Management and prevention of anemia in Pregnancy.
- To determine the association between Knowledge and Practices of MLHP's with sociodemographic profile

Section 2

Materials and methods

Study design: A cross sectional, analytical study.

Study period: The study period is 2 months i.e., from June 2023 to July 2023**.**

Study setting: Health and Wellness Centers of Rural Kakinada, Andhra Pradesh.

Study population: All MLHP's working at Health and Wellness centers in Rural Kakinada

Inclusion Criteria: Those MLHP's who were available at a training program on BCLS during the months of June &July and who were willing to participate in the study.

Sample size: Based on a previous study, good knowledge level among MLHPs was found to be 22%.Using the formula,4pq/L2 where p is the prevalence and Q is 100-p and absolute error of 6% ,the required sample size is 191.By using convenient sampling technique ,four batches of MLHPS attending a training programme in the Nursing College were included in the study .The total participants who gave consent were 209 and the study was conducted in them[10]

Study tool: A pretested, validated questionnaire was used. Study variables included Socio demographic details such as Age, sex, religion, educational qualification and years of experience. Knowledge about anemia and its management comprised 24 multiple choice questions. Practices related to anemia and its management includes 20 questions. Knowledge and practice scores were graded as Poor ≤ 50%, Fair51-75% and Good >75%. Institutional Ethics Committee approval was obtained before data collection. Data was entered in MS Excel 2020 and was analyzed using IBM SPSS 20 trail version. Chi-square test was used to test the association between knowledge and practices regarding anemia and its management.

Section 3

Results

Table 1: Distribution of study subjects based on socio-demographic variables (n=209)

Variables	Category	n (%)
Age in years	22-25	118(56.5%)
	26-29	39(18.7%)
	30-33	40(19.1%)
	34 and above	12(5.7%)
Sex	Female	195(93.3%)
	Male	14(6.7%)
Religion	Christian	35(16.7%)
	Hindu	161(77%)
	Islam	13(6.2%)
Educational qualification	BSc (Nursing)	190(90.9%)
	MSc (Nursing)	19 (9.1%)
Years of experience	<1year	47 (22.5%)
	1-2 years	106 (50.7%)
	≥ 3 years	56(26.8%)

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In the present study, nearly half of study subjects were of age group 22 to 25 years which constituted 56.5%, followed by 18.7%in 26-29 years , 19.1%were 30-33years and only 5.7% belongs to 34 and above age group. Majority were females 93.3% and males constituted only 6.7% of the subjects. Most of them i.e. 77% were Hindus, 16.7% were Christians and only 6.2% were. Most of the study subjects i.e., 90.9% had BSc Nursing 90.9% whereas only 9.1% had MSc Nursing. Nearly half of them 50.7%had 1-2 years, 26.8% had≥ 3years and only 22.5% had less than 1 year of experience.

Table 2: Level of knowledge and practices on management and prevention (n=209)

	Good (>75%)		Fair (51-75%)		Poor (<51%)	
	N	%	n	%	n	%
Knowledge	134	64.0	70	33.4	5	2.34
Practice	20	9.5	189	90.4	-	-

Table 2 represents that the level of knowledge of MLHP's revealed that nearly 134 (64%) had good, 70 (33.4%) had fair and 5 (2.34%) had poor levels of knowledge, whereas the majority 189(90.4%) reported fair while only 20 (9.5%) reportedgood practices about anemia and its management. The mean score of knowledge was 15.45± 2.9 and the mean practice score was 16.6 ±1.8

Table 3: Association of knowledge regarding prevention & Management of anaemia in pregnacy among MLHP's at Rural kakinada with selected demographic variables (n=209)

variable	categories	Level of knowledge			Total	x^2 val.	p-value
		Good	Fair	Poor			
Age in years	22-25	65(55%)	48(40.6%)	5(4%)	118(56.4%)	12.01	0.061
	26-29	30(76.9%)	9(23%)	0	39(18.6%)		NS
	30-33	31(77.5%)	9(22.5%)	0	40(19.1%)		
	34 and above	8(66%)	4(33.3%)	0	12(5.7%)		
Gender	Female	126(64.6%)	65(33.3%)	4(2%)	195(93.3%)	1.551	0.46
	Male	8(57%)	5(35.7%)	1(7.1%)	14(6.6%)		NS
Religion	Christian	24(68.5%)	10(28.5%)	1(2.85%)	35(16.7%)	3.39	0.49
	Hindu	104(64.5%)	54(33.5%)	3(1.8%)	161(77%)		NS
	Islam	6(46%)	6(46%)	1(7.6%)	13(6.2%)		
Educational qualification	BSc (Nursing)	122(64.2%)	63(33.1%)	5(2.6%)	190(90.9%)	0.573	0.75
	MSc(Nursing)	12(63%)	7(36.8%)	0	19(9%)		NS
Years of experience	> 1 year	64(60%)	40(37.7%)	2(1.8%)	106(50.7%)	8.978	0.06
	1-2 years	43(76.7%)	13(23.2%)	0	56(26.7%)		NS
	3 and above	27(57.4%)	17(36%)	0	47(22.4%)		

Table 3 shows that out of 56.4% of MLHP's aged 22-25, 55% had good and 40.6% had fair level of knowledge however this was not statistically significant.64% of female MLHP's have good knowledge about prevention

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and management of anaemia as compared to 57% of male MLHP's. However this was not statistically significant. Majority i.e 77% of MLHP's were Hindu's , in that 64.5% had good and 33.5% had fair level of knowledge it was also not statistically significant. Similarly 90% of MLHP's possessed BSc (Nursing) qualification out of them 64% had good and 33% had fair level of knowledge but not statistically significant. Nearly half i.e 50% of MLHP's possessed 1-2 years experience in that 60% had good and 37.7% had fair level of knowledge notably these findings were alsonot statistically significant.

Table 4: Association of practice of MLHP's with Selected demographic variables. (n=209)

Variable	categories	Practices Good fair		Total	Chi^2	p-value
Age in years	22-25	106(89%)	12(10%)	118(56.45%)	4.475	0.21 NS
	26-29	36(92%)	3(7.6%)	39(18.6%)		
	30-33	38(90%)	2(4.7%)	40(19%)		
	34 and above	9(75%)	3(25%)	12(5.7%)		
Gender	Female	179(91.7%)	16(8.2%)	195(93.3%)	6.261	0.012 S
	Male	10(71%)	4(28%)	14(6.6%)		
Religion	Christian	33(94.2%)	2(5.7%)	35(16.7%)	1.134	0.56 NS
	Hindu	145(90%)	16(9.9%)	161(77%)		
	Islam	11(84%)	2(15%)	13(6.2%)		
Educational qualification	BSc (Nursing)	172(90.5%)	18(9.4%)	190(90.9%)	0.022	0.88 NS
	MSc (Nursing)	17(89%)	2(10.5%)	19(9%)		
Years of Experience	> 1 year	95(89%)	11(10.3%)	106(50.7%)	0.716	0.69 NS
	1-2 years	50(89%)	6(10.7%)	56(26.7%)		
	3 and above	44(93.6%)	3(6.3%)	47(22.4%)		

Table 4: Shows that out of 209 MLHP's, half of them, 56.4%were in the age group of 22-25 and among that 89% had good practices However it was not statistically significant. Among Females 91.7% demonstrated good practices as compared to Males where 71% had good practices. This was statistically significant (x^2=6.26, P < 0.012) Variations were observed in practices based on Religion, Educational Qualification and years of experience but these were not statistically significant.

Section 4

Discussion

The present study was aimed to assess the Knowledge and Practices of Management and Prevention of Anemia in pregnancy among MLHP's. A total of 209 MLHPs were included in the study. The majority of MLHPs (56.5%) belonged to the age group of 22-25 years. Most of them were females (93.3%), 77% were Hindus. Majority of MLHPs 90.9% had B.Sc. Nursing degree. Regarding knowledge on management of anemia and its prevention 64% had good, 33.4% fair and 2.3% poor knowledge respectively. Whereas in the practice only, 9.5% demonstrating good practices and remaining 90.4% were with fair level of practices. No significant association was found between knowledge and demographic variables. On the other hand, a statistically significant association was observed between MLHP's

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practices and gender on management and prevention of anemia in pregnancy. Though 64% had good knowledge only 9.5% had good practice. Most MLHPS were about normal and cut off values for anemia however knowledge about the method of Improving adherence to IFAS was not known.

Similar findings noted in a study conducted by Kumar et al. (2018), revealed that MLHPs in India had inadequate knowledge and practices regarding maternal and child healthcare. The results showed that only 22% of MLHPs had good knowledge, 56% had fair knowledge, and 22% had poor knowledge [10]. Having good practices by MLHP's is essential for provision of effective services and also MLHP serve as role models for the field staff. Therefore, it is essential to provide ongoing hands on training to MLHPs to enhance their knowledge and promote good practices. The strength of the study was the large sample size and a limitation was that practices were not observed but measured through self-reporting.

Conclusion

The study revealed that significant proportion (64%) of MLHP's exhibited good knowledge and (90.4%) demonstrated fair practices. Only Gender shows significant association for practices.

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