



### RESEARCH ARTICLE

## A STUDY TO ASSESS THE PREVALENCE OF ANEMIA AND FACTORS HINDERING THE UTILIZATION AMONG BENEFICIARIES OF ANEMIA MUKT BHARAT CAMPAIGN AT PUDUCHERRY

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#### Abstract

**Background :** Anemia is a condition in which the number of red blood cell count lower than normal, insufficient hemoglobin levels. It is characterized by fatigue, weakness, dizziness and shortness of breath. A study to assess the prevalence of anemia and factors hindering the utilization among Beneficiaries of Anemia Mukta Bharat Campaign at Puducherry.

**Methods :** Descriptive cross-sectional research design was adopted for this study. Sample size 225. Data were assessed using the Demographic Variables, Anemia Assessment Proforma, Self-developed questionnaire for factors hindering the utilization of Anemia Mukta Bharat Campaign.

**Results :** The study findings revealed that 126(56%) had Mild, 92(40.9%) had Moderate and 7(3.1%) had Severe level of anemia. 126(56%) had Low level and 99(44%) had Moderate level of factors hindering the utilization. 125(55.6%) had [Highest] Lack of knowledge and 3(1.3%) had [Lowest] Poor Economical Background of factors hindering the utilization among the beneficiaries of anemia Mukta Bharat Campaign. Association between the Factors hindering the utilization of anemia Mukta Bharat Campaign and demographic variable were tested by using chi square test like Educational status  $X^2 = 7.43, P=0.05$ , Occupational status  $X^2 = 8.94, P=0.03$ , Family income  $X^2 = 10.9, P=0.012$ , Intake of beverages  $X^2 = 5.22, P=0.022$  and Family history of any infectious disease  $X^2 = 6.87, P=0.032$  had shown statistically significant with their selected demographic variables.

**Conclusion :** The result of this study showed that Prevalence of anaemia was very high among the study participants. It shows that anaemia is a major public health problem so efforts should be taken to reduce the prevalence of anemia and promote the health of an individual, community as well as the country.

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**Introduction:-**

A Condition known as anemia is caused by either fewer red blood cells or less of them overall than usual. It takes haemoglobin to transport oxygen. The blood's ability to deliver oxygen to the body's tissues will be compromised by an excess of haemoglobin, an aberrant or insufficient number of red blood cells, or both. This leads to symptoms including exhaustion, weakness, lightheadedness, and dyspnea, among others. the ideal concentration of haemoglobin required to fulfil physiological requirements. Age, sex, altitude of habitation, smoking habits, and pregnant status are the factors that affect it. The most prevalent causes of anemia are dietary deficiencies, especially iron deficiency, while haemoglobinopathies and infectious disorders including malaria, TB, HIV, and parasitic infections can also be caused by deficiencies in folate, vitamins B12, and A. Information on the Anemia Mukh Bharat (AMB) plan was recently presented by the Union Minister of State for Health and Family Welfare. Strengthening the current mechanisms and promoting innovative approaches to anemia treatment are the goals of the Anemia Mukh Bharat-intensified Iron-plus Initiative<sup>1</sup>.

Six target beneficiary groups, including children, adolescents, women of reproductive age, and pregnant women, are the focus of the strategy's six interventions: prophylactic iron and folic acid supplements; deworming; an intensified year-round behaviour change communication campaign called "Solid body, smart mind," which includes ensuring delayed cord clamping in newborns; digital anemia testing and point-of-care treatment; mandatory provision of iron and folic acid-fortified foods in government-funded health programmes; addressing non-nutritional causes of anemia in endemic pockets, with a special focus on malaria, hemoglobinopathies, and fluorosis; and six institutional mechanisms to reach the desired goal under the POSHAN Abhiyan. Worldwide, iron deficiency anemia during pregnancy is a public health issue that has a negative impact on maternal and neonatal outcomes. The World Health Organisation advises all pregnant women to take iron and folic acid supplements<sup>2</sup>.

Premature births, low birth weight, postpartum haemorrhage, neural tube abnormalities, stillbirths, and maternal fatalities are all linked to anemia during pregnancy. Anemia is one of the most prevalent avoidable causes of maternal and paediatric mortality in areas where malaria is predominant. Anemia can potentially be fatal in its most severe forms. Anemia can have various causes, but iron deficiency is responsible for roughly 50% of cases in school-age children and women in the reproductive age range, and 80% of cases in children ages two to five. An estimated one-third of people worldwide are iron deficient. India has pledged to meet two targets by 2022: 32% of pregnant women will have anemia by then (up from a baseline of 50% according to the National Family Health Survey) and 40% of nursing non-pregnant women will have anemia by then (up from 58% according to the same survey). Anemia is a severe worldwide public health issue that mostly impacts young children and expectant mothers. According to WHO estimates, 40% of pregnant women and 42% of children under the age of five are anemic globally<sup>40</sup>. Menstrual blood loss, inadequate nutrition, and unequal access to healthcare among genders are among the factors contributing to the disproportionate incidence of anaemia in women and teenage girls. Children's anaemia might impede their development and growth.

The World Health Organisation (WHO) defined anemia as having haemoglobin levels below 12 grammes per decilitre (g/dL) for women in the reproductive age group and below 11.0 g/dL for children under five. The programme seeks to educate communities, people, lawmakers, and healthcare professionals on the causes and effects of anaemia. It promotes the significance of controlling and preventing anaemia at all levels. The initiative's main goals are to: Enhance the provision and quality of healthcare services connected to anemia, especially at the primary healthcare level; Make sure anemia is diagnosed and treated promptly by scheduling routine screenings and check-ups. Encourage healthy, balanced eating, which includes providing vulnerable populations with nutritional supplements, consuming a variety of foods high in iron, and for the treatment of anemia in newborns and early children, emphasize breastfeeding and supplementary feeding techniques. Promote the addition of vital micronutrients like folic acid and iron to common foods like rice, wheat, and salt. Adolescent females, breastfeeding moms, and pregnant women should all participate in iron and folic acid supplementation programmes. In order to guarantee that disadvantaged persons have access to a sufficient and nourishing diet, strengthen food security initiatives and social safety nets. Run campaigns to modify behaviour through communication in order to encourage hygienic eating habits, cleanliness, and hygiene. Increase public knowledge of the significance of consistent prenatal care and adherence to folic acid and iron supplements. Work together across several fields to address the root causes of anaemia, such as health, nutrition, education, agriculture, and sanitation. Create a thorough monitoring and assessment system to monitor the decrease of anemia's progress. Gather and evaluate data in order to pinpoint high-prevalence regions and efficiently focus actions. Include local self-help groups, communities, and non-governmental organisations in the development and execution of programmes aimed at preventing and controlling anemia. To

successfully administer anemia-related interventions, healthcare professionals, community health volunteers, and educators should receive training and capacity-building initiatives. Encourage research and creativity to create sustainable and affordable anaemia control methods. India confronts difficulties in treating anaemia because of issues with awareness, food habits, and healthcare availability. It is imperative to guarantee the accessibility of reasonably priced and nourishing food, particularly in rural and marginalised populations. A multisectoral strategy including education, health care, nutrition, sanitation, and women's empowerment is needed to combat anaemia. As a component of the larger National Nutrition Mission (Poshan Abhiyaan), the Anaemia Mukht Bharat programme supports India's efforts to meet the Sustainable Development Goals, especially Goals 2 and 3 (Zero Hunger and Good Health and Well-Being). Strong government support, stakeholder cooperation, community involvement, and the incorporation of anaemia prevention and management into current health and nutrition initiatives are all necessary for its success<sup>42</sup>.

An important part in diagnosing and treating anaemia is the primary care physician, who serves as both the first point of contact for patients and the backbone of the healthcare system. Since the majority of anemic cases in the public sector can only be handled at the primary health care level, ASHA, ANM, and Anganwadi workers employed by Subcentres, Anganwadi centres, and PHCs should be well-trained and equipped to identify and manage anemia in the community. Additionally, information gathered about the prevalence of anemia will assist decision-makers in carrying out additional policies and initiatives aimed at reducing the anemia burden. The purpose of this program's current study was to ascertain the incidence of anemia and the barriers to use among Puducherry's Anemia Mukht Campaign recipients<sup>42</sup>.

#### Statement Of The Problem :

“A Study to assess the Prevalence of Anemia and Factors hindering the utilization among beneficiaries of Anemia Mukht Bharat Campaign at Puducherry”.

It deals with the research approach, research design, setting of the study, population, criteria for sample selection, sample size, sample technique development and description of the tool for data collection, procedure for data collection and statistical analysis.

A Quantitative Research approach was adopted for this present study. This study adopted descriptive research design. The Study setting at Thirubhuvanai Primary Health Centre , Puducherry. The target population for this study comprises of all Children, **Women in reproductive age [ Pre conception period], School going Adolescence boys and girls, Children, Antenatal mother , Lactating mother**

The study sample in Primary Health Centre who fulfills the inclusion criteria. Sample size consists of 225 Convenience Sampling Technique was adopted for this present study.

#### Section-A [Structured Demographic Variables]

16 Items on demographic variables consisting of age in years, gender, religion, educational status, Occupational status, Marital Status, Deworming Tablets received, Family Income, Dietary pattern, Type of family, Total number of family members, Intake of beverages, Body Mass Index [BMI], Family history of any Infectious disease, Previous Knowledge Regarding Anemia, Health Information

#### Section B:

It comprised of 20 question Anemia Assessment proforma checklist to assess anemia such as Shortness of breath, Dizziness, Palpitation, Loss of appetite, Numbness or coldness in your hand and feet, Fatigue, Hairloss, Headache, Angular Cheilitis [Inflammatory lesions at the mouth's corners, Pale Conjunctiva, Pale tongue, Pale nail, Kolionychia [Spoon shaped nails], Pale skin, Nails are weak and brittle, Problems in concentrating, Problems in Thinking, Heavy menstrual bleeding, Facial Puffiness, Delayed Capillary refilling.

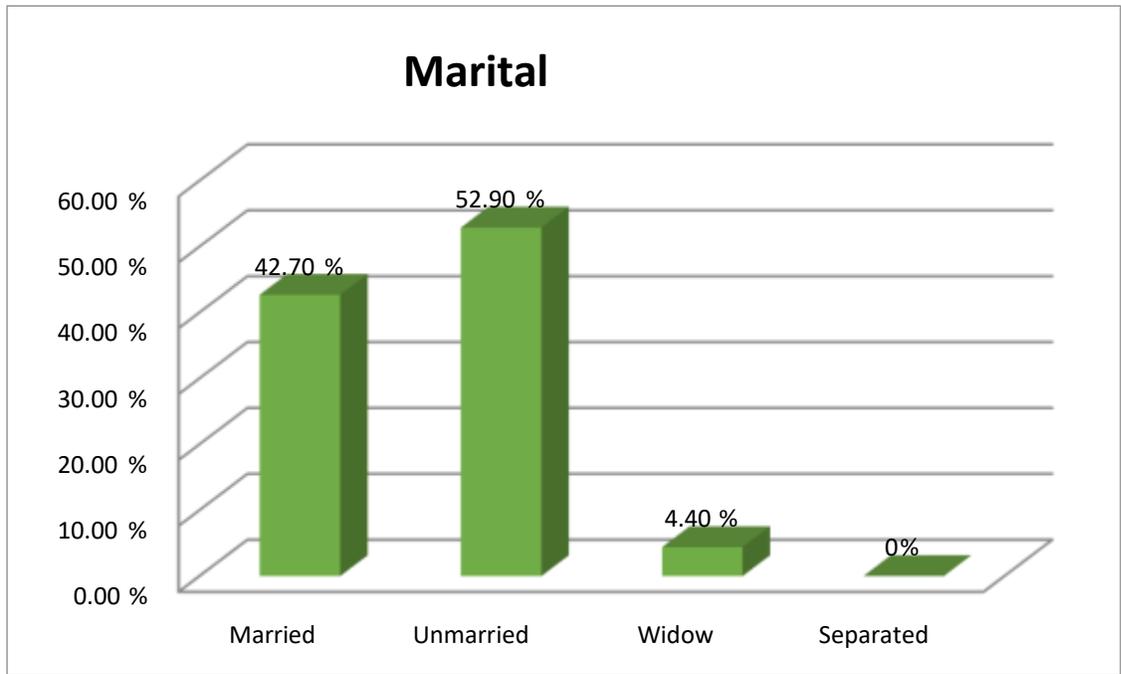
#### Scoring Interpretations:

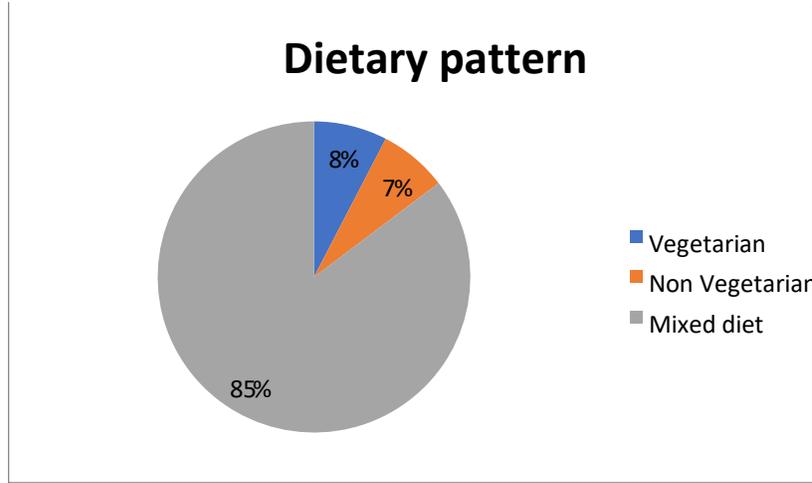
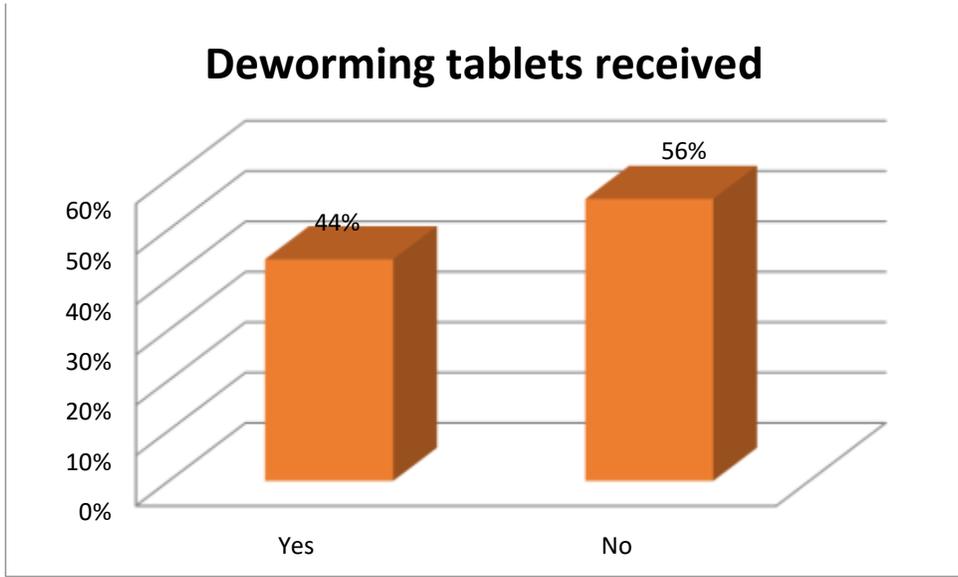
SCORE	INTERPRETATION
1-5	Mild anemia
6-10	Moderate Anemia
11-15	Severe Anemia
16-20	Very Severe Anemia

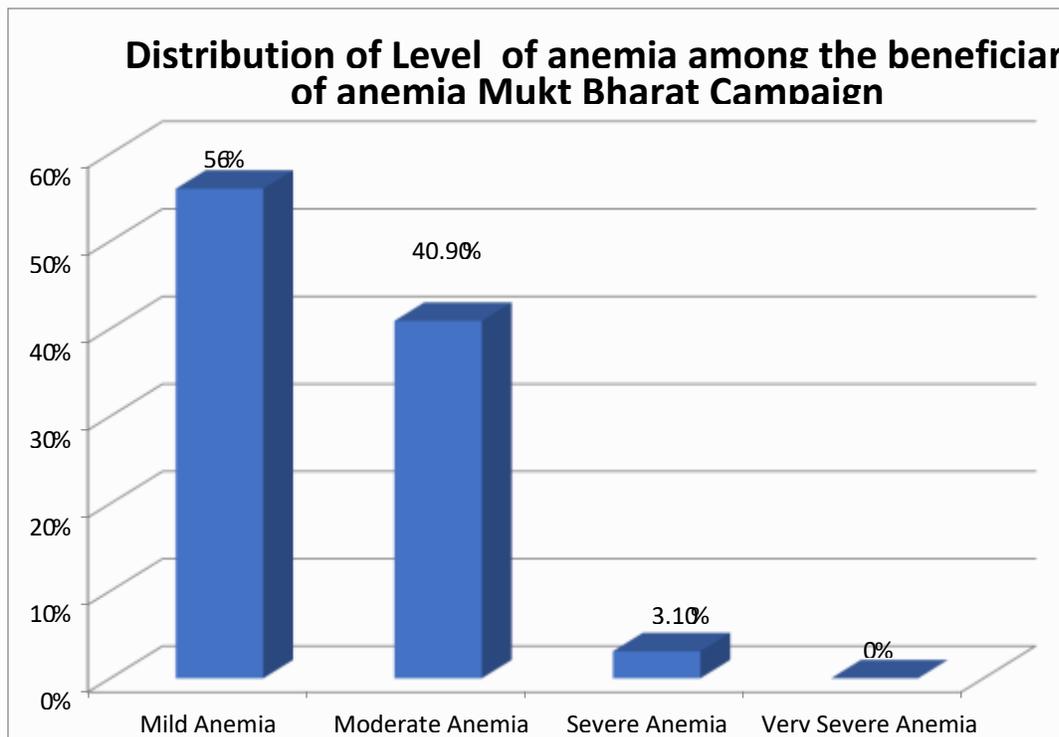
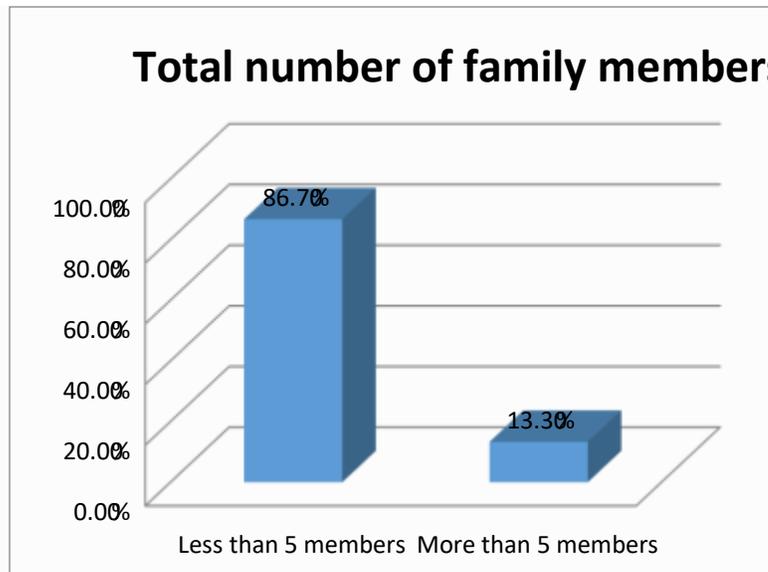
**Section:C**

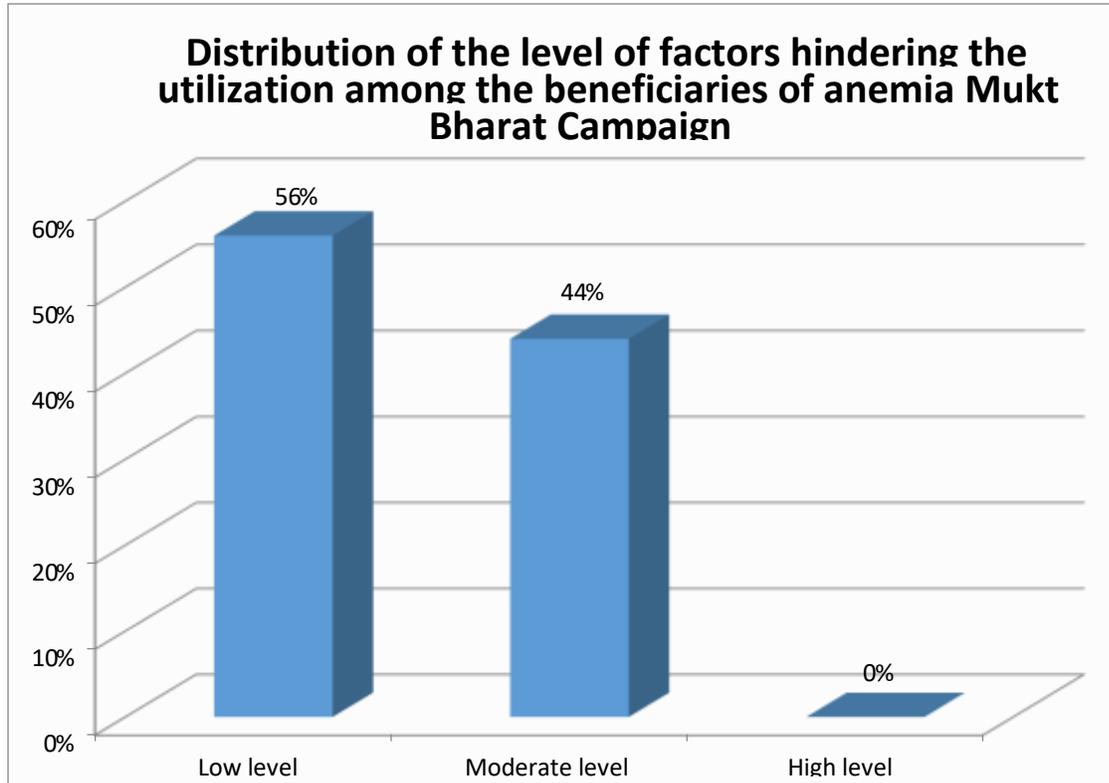
It Comprised of **12 Self -developed Questionnaire regarding Factors Hindering the utilization of Anemia Mukta Bharat Campaign.** It includes lack of knowledge, Fear of safety for long duration drug consumption, Fear of hospitalization, Peptic Ulcer, Lack of accessibility profined, no transport facilities, Laziness, Difficult to take iron tablets in case of anemia, Difficult to follow up, Improper diet, Poor Economical Background, Co-Morbid conditions. Each correct answer carries 1 mark and wrong answer carries 0 marks; Total score is 12. Each correct answer carries 1 mark and wrong answer carries 0 marks; Total score is 12

SCORE	INTERPRETATION
1-4	low level
5-8	Moderate Level
9-12	High Level









### Results and Discussion:-

The first objectives were to assess the prevalence of anemia and factors hindering the utilization among the beneficiaries of anemia Mukht Bharat Campaign.

Majority of the subjects 126(56%) had Mild, 92(40.9%) had Moderate and 7(3.1%) had Severe level of anemia. The mean and standard deviation prevalence of anemia among the beneficiaries of anemia Mukht Bharat Campaign is  $(5.01 \pm 2.61)$  respectively. **The Second objectives of the study were to associate the prevalence of anemia among the beneficiaries of anemia Mukht Bharat Campaign with their selected demographic variables. The association between the prevalence of anemia with demographic variables were tested by using Chi square test like** Age in years, educational status, Dietary pattern, Family income, Type of family, Total number of family members, Body Mass Index [BMI], Previous knowledge regarding anemia and Health information through **had shown** statistically significant. The other demographic variables had not shown statistically significant. **The Third objectives of the study was to associate the factor hindering the utilization among the beneficiaries of anemia Mukht Bharat Campaign into their selected demographic variables.** Majority of subjects 126(56%) had Low level and 99(44%) had Moderate level of

factors hindering the utilization and the mean and standard deviation the level of factors hindering the utilization among the beneficiaries of anemia Mukht Bharat Campaign is  $(3.72 \pm 1.80)$  respectively.

### Conclusion:-

The result of this study showed that Prevalence of anaemia was very high among the study participants. It shows that anaemia is a major public health problem so efforts should be taken to reduce the prevalence of anemia and promote the health of an individual, community as well as the country

### Nursing Education

- Nursing curriculum should enable student nurses to equip themselves with client knowledge of anemia.
- The education system should emphasizes the application of anemic checklist to identify the risk of anemia.
- The Postgraduate Nursing student may provoke the necessity regarding knowledge of anemia through organising workshop, conference, Seminar & Community people.

- Peer group education emphasized regarding anemia.

### Nursing Practice

- To Train the Healthcare workers to find out the anemic client in Primary Health Centre.
- Nurses educate the anemic patient for adopting healthier lifestyle in order to improve self care abilities.
- Create awareness among village level health workers regarding anemia through teaching programme.
- Food Preparation demonstrated on Iron Rich diet to create awareness among clients.
- Discussion, dietary exhibition, Periodic health checkup has been conducted in community area.

### Nursing Administration

- Nursing administrator should arrange seminar, conference, workshop related to anemia for including knowledge & Attitude towards anemia.
- Nurse administrator can also arrange for In-service education, Counseling, Awareness Programmes for anemic clients on a weekly basis in an outpatient Department at Primary Health Centre.
- Nurse administrators can arrange adequate Village level health care workers in Primary health care centre to identify the anemic clients and improve health conditions.

### Nursing Research

- The findings of the study help for further research in community health nursing and student to develop in career profession.
- Nursing Research findings can inform educational materials and programs aimed at raising awareness about anemia, promoting adherence to treatment plans and empowering patients to manage their condition effectively.
- Research findings can provide evidence to support policy initiatives aimed at improving access to healthcare, reducing socioeconomic inequalities, and implementing population wide interventions to combat anemia.
- Nursing research can provide supportive care measures which may improve knowledge regarding anemia.

### Limitations

- ☒ This study was limited to 6 weeks period of data collection.
- ☒ This study was limited to beneficiaries who availed at the time of data collection in Primary Health Centre.
- ☒ The study was limited to only six target groups who benefitted under Anemia Mukht Bharat Campaign.

**Table-4.4:-** Distribution of the factors hindering the utilization among the beneficiaries of Anemia Mukht Bharat Campaign (N=225)

SL.NO	FACTORS	Y	ES	NO	
		N	%	N	%
1.	Lack of knowledge ( <b>HIGHEST</b> )	125	55.6	100	44.4
2.	Fear of Safety for long duration drug consumption	108	48	117	52
3.	Fear of hospitalization	89	39.6	136	60.4
4.	Peptic Ulcer	93	41.3	132	58.7
5.	Lack of accessibility profined	21	9.3	204	90.7
6.	No transport Facilities	61	27.1	164	72.9
7.	Laziness	124	55.1	101	44.9
8.	Difficult to take iron tablets in case of Anemia	20	8.9	205	91.1
9.	Difficult to follow up	70	31.1	155	68.9
10.	Improper Diet	68	30.2	157	69.8
11.	Poor Economical Background ( <b>LOWEST</b> )	3	1.3	222	98.7
12.	Co-Morbid conditions	15	6.7	210	93.3

**Table -4.4:** Shows that distribution of the level of factors hindering the utilization among the beneficiaries of anemia Mukht Bharat Campaign. Majority of subjects 125(55.6%) had [Highest]Lack of knowledge and 3(1.3%) had [Lowest] Poor Economical Background level of factors hindering the utilization.

**Section D: Association between the prevalence of anemia among the beneficiaries of anemia Mukht Bharat Campaign with their demographic variables.**

**Table 4.5:-** Association between the prevalence of anemia among the beneficiaries of Anemia Mukht Bharat Campaign with their demographic variables. (N=225)

SL. NO	DEMOGRAPHIC VARIABLES	PREVALENCE OF ANEMIA						Chi-square $X^2$ and P-Value
		Mild		Moderate		Severe		
		N	%	N	%	N	%	
<b>1</b>	<b>Age in years</b>							$X^2=14.01$ Df=6 p =0.03 *S
	6-11 months	9	7.1	3	3.3	0	0	
	1-5 years	36	28.6	10	10.9	2	28.6	
	6- 10 Years	9	7.1	7	7.6	1	14.3	
	10 years of age and above	72	57.2	72	78.3	4	57.1	
<b>2</b>	<b>Gender</b>							$X^2=2.9$ Df=4 p =0.55 NS
	Male	54	42.9	30	32.6	2	28.6	
	Female	70	55.5	61	66.3	5	71.4	
	Transgender	2	1.6	1	1.1	0	0	
<b>3</b>	<b>Religion</b>							$X^2=3.08$ Df=4 p =0.54 NS
	Hindu	114	90.5	77	83.7	6	85.7	
	Muslim	8	6.3	9	9.8	1	14.3	
	Christian	4	3.2	6	6.5	0	0	
	Others	0	0	0	0	0	0	
<b>4</b>	<b>Educational status</b>							$X^2=13.3$ Df=6 p =0.038 *S
	Illiterate	25	19.8	25	27.1	3	42.9	
	Primary Education	73	57.9	33	35.9	3	42.9	
	Higher Education	17	13.6	18	19.6	0	0	
	Others	11	8.7	16	17.4	1	14.2	
<b>5</b>	<b>Occupational status</b>							$X^2=10.2$ Df=6 p =0.116 NS
	Employed	15	11.9	20	21.7	1	14.3	
	Unemployed	87	69	46	50	4	57.1	
	Self -employed	9	7.2	11	12	0	0	
	Daily wages	15	11.9	15	16.3	2	28.6	
<b>6</b>	<b>Marital status</b>							$X^2=9.21$ Df=4 p =0.056 NS
	Married	44	34.9	48	52.2	4	57.1	
	Unmarried	76	60.3	41	44.6	2	28.6	
	Widow	6	4.8	3	3.2	1	14.3	
	Separated	0	0	0	0	0	0	
<b>7</b>	<b>Deworming tablets received</b>							$X^2=1.35$ Df=2 p=0.508 NS
	Yes	59	46.8	38	41.3	2	28.6	
	No	67	53.2	54	58.7	5	71.4	
<b>8</b>	<b>Family income</b>							$X^2=16.35$ Df=6 p =0.012 *S
	< Rs.5000	16	12.7	23	25	1	14.3	
	Rs. 5000-10000	85	67.5	40	43.5	4	57.1	
	Rs. 11000-15000	15	11.9	13	14.1	0	0	
	Above 16000	10	7.9	16	17.4	2	28.6	
<b>9</b>	<b>Dietary pattern</b>							$X^2=11.9$ Df=4 p =0.018 *S
	Vegetarian	7	5.6	10	10.9	0	0	
	Non-Vegetarian	4	3.2	12	13	0	0	
	Mixed diet	115	91.2	70	76.1	7	100	
<b>10</b>	<b>Type of family</b>							$X^2=41.1$ Df=4 p =0.000 **HS
	Single parented family	9	7.1	3	3.3	0	0	
	Nuclear family	117	92.9	63	68.5	6	85.7	
	Joint family	0	0	26	28.2	1	14.3	

	Extended family	0	0	0	0	0	0	
<b>11</b>	<b>Total number of family members</b>							$X^2=45.7$
	less than 5 members	126	100	63	68.5	6	85.7	<b>Df=2 p</b>
	more than 5 members	0	0	29	31.5	1	14.3	<b>=0.000</b>
								<b>**HS</b>
<b>12</b>	<b>Intake of beverages</b>							$X^2=2.4$
	Yes	94	74.6	68	73.9	7	100	<b>Df=2 p</b>
	No	32	25.4	24	26.1	0	0	<b>=0.300</b>
								<b>NS</b>
<b>13</b>	<b>Body Mass Index [BMI]</b>							$X^2=12.7$
	Below 18.5	23	18.3	9	9.8	3	42.8	<b>Df=6 p</b>
	18.5-24.9	72	57.1	46	50	2	28.6	<b>=0.048</b>
	25.0-29.9	26	20.6	34	37	2	28.6	<b>*S</b>
	30 and above	5	4	3	3.2	0	0	
<b>14</b>	<b>Family history of any infectious disease</b>							$X^2=3.42$
	Yes	4	3.2	0	0	0	0	<b>Df=4 p</b>
	No	124	96.8	92	100	7	100	<b>=0.49</b>
								<b>NS</b>
<b>15</b>	<b>Previous knowledge regarding anemia</b>							$X^2=12.9$
	Yes	16	12.7	30	32.6	1	14.3	<b>Df=2 p</b>
	No	110	87.3	62	67.4	6	85.7	<b>=0.002</b>
								<b>**S</b>
<b>16</b>	<b>Health information through</b>							$X^2=24.5$
	Health Sector	112	88.9	66	71.7	4	57.1	<b>Df=6 p</b>
	Newspaper	0	0	10	10.9	0	0	<b>=0.000</b>
	Neighbours	5	4	9	9.8	2	28.6	<b>**HS</b>
	Social Media	9	7.1	7	7.6	1	14.3	

\*-p < 0.05 significant, \*\*-p < 0.001 Highly significant, NS-Non significant The table 4.5 Depicts that the evidence of Chi square test revealed that demographic variable, Age in years, educational status, Dietary pattern, Family income, Type of family, Total number of family members, Body Mass Index [BMI], Previous knowledge regarding

	Separated	0	0	0	0	
<b>7</b>	<b>Deworming tablets received</b>					$X^2=0.48$
	Yes	58	46	41	41.4	<b>Df=1 p</b>
	No	68	54	58	58.6	<b>=0.489</b>
						<b>NS</b>
<b>8</b>	<b>Family income</b>					$X^2=10.9$
	< Rs.5000	19	15.1	21	21.2	<b>Df=3 p</b>
	Rs. 5000-10000	72	57.1	57	57.6	<b>=0.012</b>
	Rs. 11000-15000	23	18.3	5	5.1	<b>*S</b>
	Above 16000	12	9.5	16	16.1	
<b>9</b>	<b>Dietary pattern</b>					$X^2=2.66$
	Vegetarian	10	7.9	7	7.1	<b>Df=2 p</b>
	Non-Vegetarian	12	9.5	4	4	<b>=0.264</b>
	Mixed diet	104	82.6	88	88.9	<b>NS</b>
<b>10</b>	<b>Type of family</b>					$X^2=2.27$
	Single parented family	5	4	7	7.1	<b>Df=2</b>
	Nuclear family	103	81.7	83	83.8	<b>p</b>
	Joint family	18	14.3	9	9.1	<b>=0.32</b>
	Extended family	0	0	0	0	<b>NS</b>
<b>11</b>	<b>Total number of family members</b>					$X^2=0.22$
	less than 5 members	108	85.7	87	87.9	<b>Df=1</b>
	more than 5 members	18	14.3	12	12.1	<b>p</b>
						<b>=0.63</b>

						NS
<b>12</b>	<b>Intake of beverages</b>					$X^2=5.22$
	Yes	102	81	67	67.7	<b>Df=1 p</b> <b>=0.022</b> <b>*S</b>
	No	24	19	32	32.3	
<b>13</b>	<b>Body Mass Index [BMI]</b>					$X^2=2.11$
	Below 18.5	18	14.3	17	17.2	<b>Df=3</b> <b>p</b> <b>=0.54</b> <b>NS</b>
	18.5-24.9	67	53.2	53	53.5	
	25.0-29.9	38	30.2	24	24.2	
	30 and above	3	2.3	5	5.1	
<b>14</b>	<b>Family history of any infectious disease</b>					$X^2=6.87$
	Yes	0	0	4	4	<b>Df=2 p</b> <b>=0.032</b> <b>*S</b>
	No	126	100	95	96	
<b>15</b>	<b>Previous knowledge regarding anemia</b>					$X^2=2.39$
	Yes	31	24.6	16	16.2	<b>Df=1 p</b> <b>=0.122</b> <b>NS</b>
	No	95	75.4	83	83.8	
<b>16</b>	<b>Health information through</b>					$X^2=2.65$
	Health Sector	101	80.2	81	81.8	<b>Df=3 p</b> <b>=0.448</b> <b>NS</b>
	Newspaper	8	6.3	2	2	
	Neighbours	8	6.3	8	8.1	<b>NS</b>
	Social Media	9	7.2	8	8.1	

anemia and Health information through had shown statistically significant association between the prevalence of anemia among the beneficiaries of anemia Mukht Bharat Campaign with their demographic variables. The other demographic variable had not shown statistically significant association between the prevalence of anemia among the beneficiaries of anemia Mukht Bharat Campaign with their demographic variables respectively.

#### Section E: Association between the factor hindering the utilization of anemia Mukht Bharat Campaign into their selected demographic variables.

**Table 4.6:-** Association between the factor hindering the utilization among the beneficiaries of anemia Mukht Bharat Campaign into their selected demographic variables. (N=225)

SL.NO	DEMOGRAPHIC VARIABLES	FACTOR HINDERING THE UTILIZATION				Chi-square $X^2$ and P-Value
		Low		Moderate		
		N	%	N	%	
<b>1</b>	<b>Age in years</b>					$X^2=0.63$
	6-11 months	7	5.6	5	5.1	<b>Df=3</b> <b>p</b> <b>=0.88</b> <b>NS</b>
	1-5 years	26	20.6	22	22.1	
	6- 10 Years	11	8.7	6	6.1	
	10 years of age and above	82	65.1	66	66.7	
<b>2</b>	<b>Gender</b>					$X^2=3.8$
	Male	49	38.9	37	37.4	<b>Df=2 p</b> <b>=0.144</b> <b>NS</b>
	Female	77	61.1	59	59.6	
	Transgender	0	0	3	3	
<b>3</b>	<b>Religion</b>					$X^2=2.99$
	Hindu	112	88.8	85	85.9	<b>Df=2 p</b> <b>=0.224</b> <b>NS</b>
	Muslim	7	5.6	11	11.1	
	Christian	7	5.6	3	3	
	Others	0	0	0	0	
<b>4</b>	<b>Educational status</b>					$X^2=7.43$
	Illiterate	27	21.4	26	26.3	<b>Df=3</b> <b>p</b> <b>=0.05</b>
	Primary Education	55	43.7	54	54.5	
	Higher Education	26	20.6	9	9.1	

	Others	18	14.3	10	10.1	*S
<b>5</b>	<b>Occupational status</b>					<b>X<sup>2</sup>=8.94</b>
	Employed	24	19	12	12.1	<b>Df=3</b>
	Unemployed	72	57.1	65	65.7	<b>p</b>
	Self –employed	16	12.7	4	4	<b>=0.03</b>
	Dailywages	14	11.2	18	18.2	*S
<b>6</b>	<b>Marital status</b>					X <sup>2</sup> =4.14
	Married	59	46.8	37	37.4	Df=2 p
	Unmarried	64	50.8	55	55.5	=0.126
	Widow	3	2.4	7	7.1	NS

\*-p < 0.05 significant, \*\*-p < 0.001 Highly significant, NS-Non significant

**Table 4.6** Depicts that the evidence of Chi square test revealed that demographic variables, educational status, Occupational status, Family income, Intake of beverages and Family history of any infectious disease had shown statistically significant association between the factor hindering the utilization among the beneficiaries of anemia Mukht Bharat Campaign into their selected demographic variables. The other demographic variables had not shown statistically significant association between the factor hindering the utilization among the beneficiaries of anemia Mukht Bharat Campaign into their selected demographic variables.

### Recommendations:-

- The same study can be conducted in different settings
- The study can be replicated with larger samples for better generalizations.
- Holistic approach is needed. Various measures should be taken to combat anemia such as
  - ☐ Eating nutritious and iron-rich foods,
  - ☐ IFA supplementation during pregnancy and lactation
  - ☐ Weekly iron-folic supplements for adolescents, deworming
  - ☐ Health education
  - ☐ Provision of fortified foods
  - ☐ Screening and treatment of non-nutritional causes of anemia.
  - ☐ Improving women's education and empowering them is also important so they can make better dietary choices for themselves and their families.

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