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A Study to Assess the Effectiveness of Nutri Ball Effect on Haemoglobin Level Among Antenatal Mothers at Selected PHC Bangalore.

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ABSTRACT

population: Pregnant mothers **study setting:** Selected **PHC** Bangalore. **Sample:** In this study, the sample is considered Pregnant mother with moderate & mild level of haemoglobin (8-10.9, 11-11.9 g/dl).**sample size:** Total sample size consists 60 pregnant mothers **sampling technique:** In this study, non-probability purposive sampling technique is used to select the sample. **sampling criteria:** The participants for the research are recruited based on the inclusion and exclusion **Inclusion criteria:** Who are pregnant primi and multi mothers, who are all having moderate and mild level of haemoglobin (8.0 – 10. 9 g/ dl, 11.0- 11.9 g/dl), Who are below 37 weeks of gestation **Exclusion criteria:** Who are in above 38 weeks of gestation independent variables: In this study, Nutri ball is the independent variable. Dependent variables: In this study, haemoglobin level is the dependent variable. description of the tools: Tool / instrument is the device used to collect the data Demographic variables such as Age, Religion, Educational status, Food type, Family income, gravida, gestational weeks, source of information, Assessment of haemoglobin level by hemoglobinometer. Hemoglobinometer: Hb level on first day Hb level and 28 days For Anaemia: Assessment tool: Sahli's haemoglobinometer HB level on first day HB level 28-day scoring: **Reliability**: Test re test method was used to test the reliability of the tool was found to be reliable, (r=0.9). **results: pre**- test level of hemoglobin among pregnant mother's 45 %of them are in mild anemia, 55 %of them are in moderate anemia. post- test level of hemoglobin 48.3% mothers had normal haemoglobin,36.7%had 36.7% hemoglobin and 15% had moderate anemia. There is significant difference between pretest and post- test level of haemoglobin among antenatal mothers at selected PHC Bangalore. Hence stated hypothesis accepted.the average pre- test scores on the hemoglobin level among antenatal mothers 10.31525and the post- test mean score is 11.85254 The paired 't' value was 2.48 when compared to the table value it was high. This shows that there is significant (at $P<0.05$ level) relationship between pre- test and post- test scores on hemoglobin level among antenatal mother. It shows that Nutri ball on hemoglobin level among antenatal mother was effective. And stated hypothesis is accepted to find out the association between pre-test level of haemoglobin among antenatal mothers at selected PHC Bangalore there is no association with selected demographic variables hence stated hypothesis is rejected. **Conclusion:** the study concludes that post-test haemoglobin levels are higher than pretest haemoglobin level hence the Nutri ball is effective for pregnant mothers during antenatal period to improve haemoglobin level.

Key words: Nutri Bal. Anaemia, Antenatal Mother, Haemoglobin.

INTRODUCTION:

Pregnancy is an experience that every woman has. Numerous physiological changes occur during pregnancy, which is wherefore the woman mostly experiences anemia.due to this many complications may occur. Mother feels ill as an outcome and her everyday activities will be impacted. The fetus also affects and develops fetal abnormalities as a result of this. An important aspect of pregnancy is maintaining a healthy diet. Healthy eating during pregnancy is important as body changes during this time affect anindividual's nutritional and dietary needs. Pregnancy are becoming more independent and making many food decisions on their own.

NEED FOR STUDY: Nutri Balls are specially formulated nutritional supplements designed to address common dietary deficiencies during pregnancy, particularly iron, folic acid, and other essential vitamins and minerals. During pregnancy, the body's nutritional demands increase significantly to support the growing foetus and ensure maternal health. Many pregnant

women experience anaemia, primarily due to iron deficiency, which can lead to fatigue, weakness, and complications such as preterm birth and low birth weight. Nutri Balls, which are typically rich in iron, folic acid, vitamin B12, and other micronutrients, offer a convenient way to boost maternal nutrition and improve haemoglobin levels. Research has shown that supplementation with such fortified foods can help increase haemoglobin levels, reduce the risk of anaemia, and promote better pregnancy outcomes. The compact form of Nutri Balls makes it easier for pregnant women to consume vital nutrients, especially for those with poor appetites or difficulties in swallowing pills. Regular consumption of Nutri Balls can significantly enhance iron absorption, improve overall energy levels, and support the healthy development of the baby. Therefore, Nutri Balls can be an effective nutritional intervention for pregnant women, ensuring better health for both the mother and the foetus throughout the pregnancy. Hence researcher is felt it is important to encourage mother.**Objectives**

1. To assess the pre-test and post- test level of haemoglobin among antenatal mothers at selected PHC Bangalore.

2) To evaluate the effectiveness of Nutri ball effect on haemoglobin level among antenatal mothers.

3) To find out the association between pre-test level of haemoglobin among antenatal mothers at selected PHC Bangalore.

Hypothesis:

H1: There is significant difference between pretest and post- test level of haemoglobin among antenatal mothers at selected PHC Bangalore.

H2 – There is significant effectiveness of hemonutri ball on haemoglobin antenatal mothers at selected PHC Bangalore.

H3 – There is significant association between the pre- test level of haemoglobin with their selected demographic variables of the among antenatal mothers at selected PHC Bangalore.

METHODOLOGY: In this study quantitative research approach was used.

RESEARCH DESIGN: In this study, Quasi- experimental (non-randomized control group) design was used.

GROUP	PRE-TEST	INTERVENTION	POST TEST
GROUP 1	✓	✓	✓
	Assessing the haemoglobin First day	It includes Ragi 20 gms, Groundnut 10 gms, green gram 10 gms, Dates 10 gms, Jaggery 50 gms. 11 Each 100gms of hemonutri ball given to the pregnant mothers twice a day for about 30 days. 100 gm of hemonutri ball provide about 13.28 gm protein, 381.3 kcal of energy and 10.25 mg of iron.	Assessing the haemoglobin. **28 th day**

POPULATION: Pregnant mothers **STUDY SETTING: Selected PHC Bangalore.**

SAMPLE: In this study, the sample is considered Pregnant mother with moderate & mild level of haemoglobin (8-10.9, 11-11.9 g/dl).

SAMPLE SIZE: Total sample size consists 60 pregnant mothers

SAMPLING TECHNIQUE: In this study, non-probability purposive sampling technique is used to select the sample.

SAMPLING CRITERIA:

The participants for the research are recruited based on the inclusion and exclusion

Inclusion criteria:

- Who are pregnant primi and multi mothers
- Who are all available at the time of data collection
- Who are willing to participate in the study

- Who are all having moderate and mild level of haemoglobin (8.0 – 10. 9 g/ dl, 11.0-11.9 g/dl)
- Who are below 37 weeks of gestation

Exclusion criteria:

- ❖ Who are all absent at the time of data collection
- ❖ Who are all not willing to participate in the study
- ❖ Who are all having normal haemoglobin level.
- ❖ Who are having severe anaemia
- ❖ Who are having disorders
- ❖ Who are in above 38 weeks of gestation

Independent variables: In this study, Nutri ball is the independent variable

- Dependent variables: In this study, haemoglobin level is the dependent variable.

DESCRIPTION OF THE TOOLS: Tool / instrument is the device used to collect the data Demographic variables such as Age, Religion, Educational status, Food type, Family income, gravida, gestational weeks, source of information,

Section B: Assessment of haemoglobin level by hemoglobinometer. Hemoglobinometer: Hb level on first day Hb level and 28 days

For Anaemia: Assessment tool: Sahli's haemoglobinometer HB level on first day HB level 28-day scoring:

S.No	ANAEMIS ASSESSMENT	RANGE
	NO ANEMIA	> 12g/dl
	MILD ANEMIA	11-11.9g/dl
	MODERATE ANEMIA	8-10.9g/dl
	SEVERE ANEMIA	< 8g/dl

RELIABILITY: Test re test method was used to test the reliability of the tool was found to be reliable, (r=0.9).

Analysis:

DESCRIPTION OF SAMPLES ACCORDING TO THEIR DEMOGRAPHIC VARIABLES

Table 4.1: Frequency and percentage distribution of demographic variables among antenatal mothers at selected PHC Bangalore.

S. No.	DEMOGRAPHIC VARIABLES	GROUP	
		Frequency (n1)	Percentage (%)
1	**Age (in years)**		
	a) 18-25	32	53.3
	b) 26-33	19	31.67
	c) 34-41	9	15
2	**Religion**		
	a) Hindu	43	71.67
	b) Christian	10	16.67
	c) Muslim	7	11.67
3	**Husband education**		
	a) Non formal education	5	8.33
	b) Primary education	28	46.67
	c) Higher secondary	22	36.67
	d) Graduate above	5	8.33
4	**Mothers' education**		
	a) Non formal education	8	13.33
	b) Primary education	22	36.67
	c) Higher secondary	25	41.67

	d) Graduate above	5	8.33
5	**Occupation**		
	a) Government employee	4	6.67
	b) Agriculture	14	23.33
	c) Daily wages	15	25
	House wife	27	45
6	**Food pattern**		
	a) Vegetarian	8	13.33
	Non vegetarian	52	86.67
7	**Family income per month**		
	a) Rs.10001- 20000	15	25
	b) Rs.20001-30000	28	46.67
	c) Rs.30000 above	17	28.33
8	**Duration of marriage**		
	a) 1-3	24	40
	b) 4-6	26	43.33
	Above 6	10	16.67
9	**Gravida**		
	a) Primi	42	70
	Multi	18	30
10	**Gestational weeks**		
	a) <12 weeks	18	30
	b) 13-24	33	55
	c) 25-36	9	15
	>37 weeks	0	0
11	**Previous knowledge about anemia**		
	a) Yes	35	58.33
	No	25	41.67
12	**Source of information**		
	a) Mass media	9	15
	b) Family	13	21.67
	c) School	32	53.33
	Friends	6	10

SECTION B: ASSESS THE PRE-TEST OF HAEMOGLOBIN AMONG ANTENATAL MOTHERS AT SELECTED PHC BANGALOR

Table 4.2: Frequency and percentage distribution of the hemoglobin level antenatal mothers at selected PHC Bangalore.

Level of anemia (g/dl)	**group**	
	Frequency	**Percentage**
Normal	0	0
Mild anemia	27	45%
Moderate anemia	33	55%
Severe anemia	0	0

Table 4.2 depicts that frequency and percentage distribution of pre- test level of hemoglobin among pregnant mother's 45 %of them are in mild anemia, 55 %of them are in moderate anemia

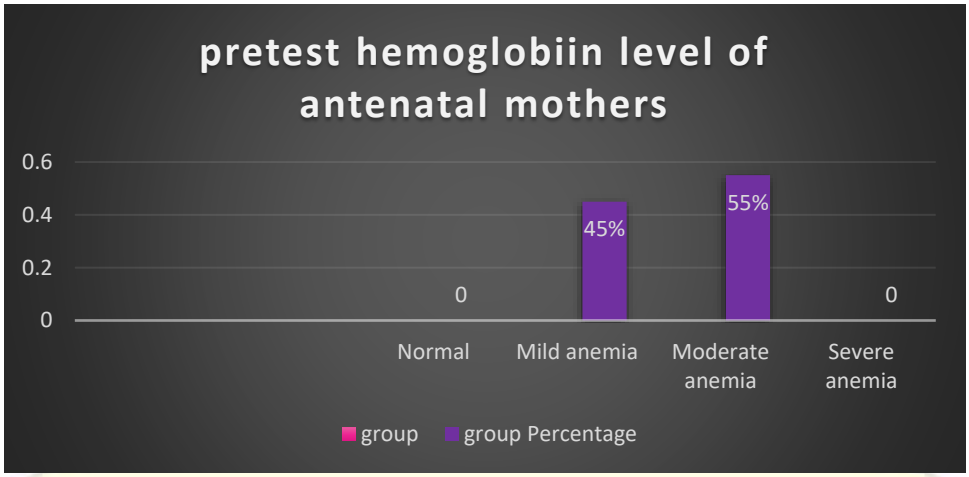


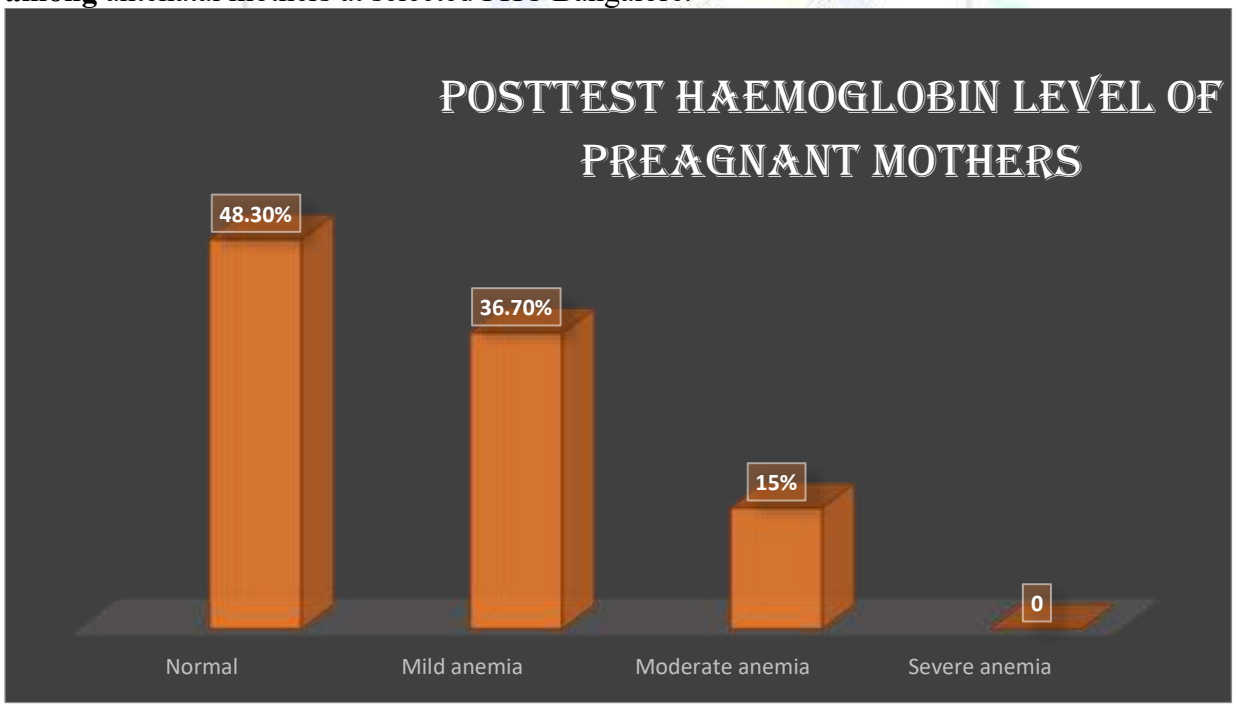
Fig. 4.2.1: Frequency and percentage distribution of samples based on pre-test scores of hemoglobin level among

Table 4.3: Frequency and percentage distribution on post- test level of hemoglobin among antenatal mothers at selected PHC Bangalore.

Level of anemia (g/dl)	**group**	
	Frequency	**Percentage (%)**
Normal	29	48.3%
Mild anemia	22	36.7%
Moderate anemia	9	15%
Severe anemia	0	0

Table 4.3 depicts that frequency and percentage distribution of post- test level of hemoglobin 48.3% mothers had normal haemoglobin,36.7%had 36.7% hemoglobin and 15% had moderate anemia.

among antenatal mothers at selected PHC Bangalore.



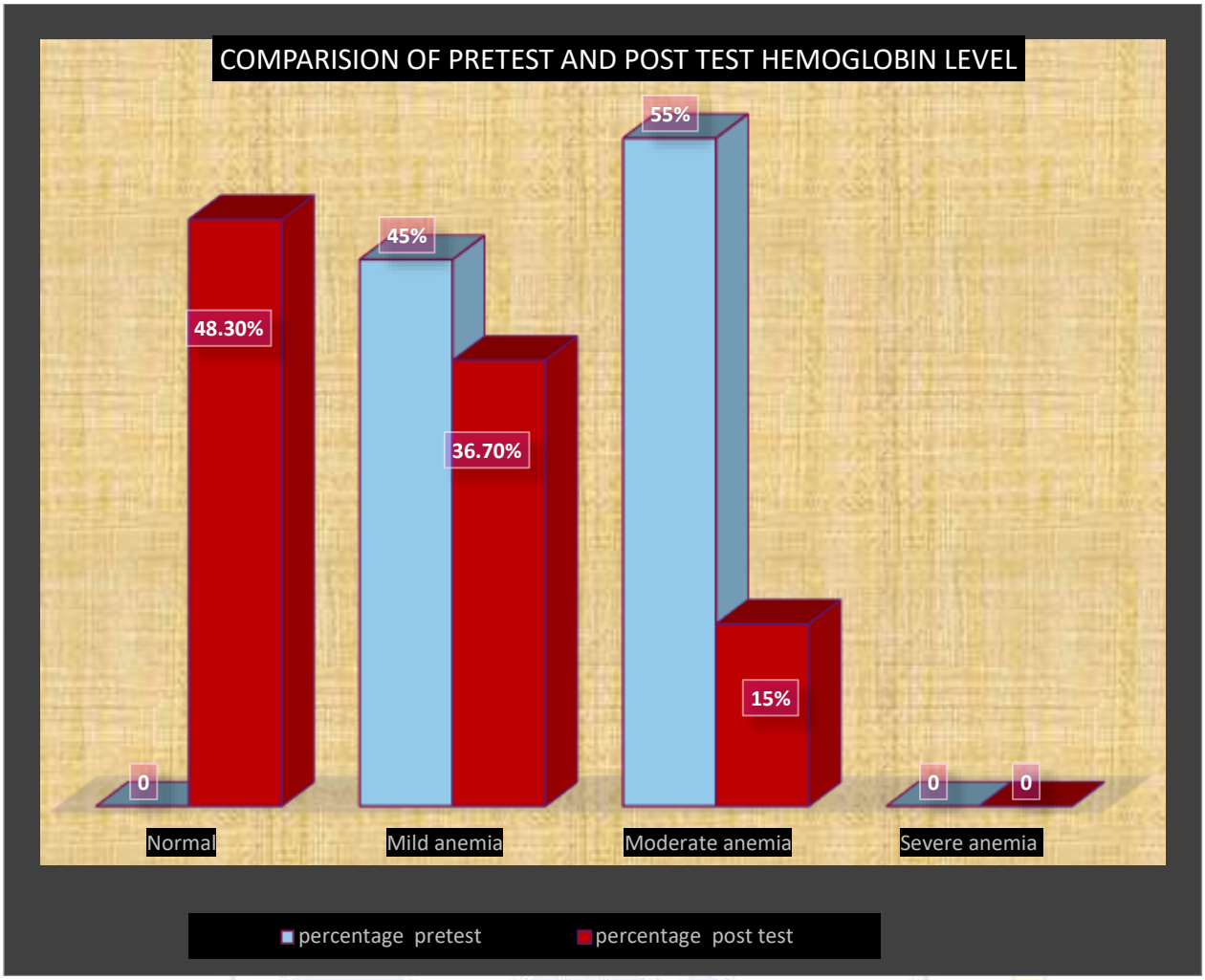


Fig.4.3.1: Comparison of pretest and posttest hemoglobin level among antenatal mothers at selected PHC Bangalore. Post test haemoglobin shows more than pre test haemoglobin level

.SECTION C: TO EVALUATE THE EFFECTIVENESS OF HEMONUTRI BALL ADMINISTRATION OF THE ADOLESCENT GIRLS IN EXPERIMENTAL GROUP AND CONTROL GROUP:

Table 4.4: Compare the pre- test and post- test scores of hemoglobin of the

Test	Mean	Standard Deviation	t Value
Pre- test	10.31525	0.977423	
Post- test	11.85254	0.797486	2.48

df=59 Significant P< 0.05 the result is significant because the p-value (0.017) is less than 0.05

Table 4.4 shows that the average pre- test scores on the hemoglobin level among antenatal mothers 10.31525and the post- test mean score is 11.85254 The paired 't' value was 2.48 when compared to the table value it was high. This shows that there is significant (at P<0.05 level) relationship between pre- test and post- test scores on hemoglobin level among antenatal mother. It shows that nutri ball on haemoglobin level among antenatal mother was effective.

SECTION D: FIND OUT THE ASSOCIATION BETWEEN PRE- TEST LEVEL OF HAEMOGLOBIN OF WITH THEIR SELECTED DEMOGRAPHIC VARIABLES:

Table 4.7: Association between pre- test level of hemoglobin with their selected demographic variables:

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S. No.	DEMOGRAPHIC VARIABLES	Frequency (n1)	X2 value	Df value	Table value	Inference
1	**Age (in years)**		13.3	2	5.991	NS
	18-25	32				
	26-33	19				
	34-41	9				
2	**Religion**		39.90	2	5.991	NS
	Hindu	43				
	Christian	10				
	Muslim	7				
3	**Husband education**		27.88	3	7.815	NS
	Non formal education	5				
	Primary education	28				
	Higher secondary	22				
	Graduate above	5				
4	**Mothers' education**		19.88	3	7.815	NS
	Non formal education	8				
	Primary education	22				
	Higher secondary	25				
	Graduate above	5				
6	**Occupation**		17.74	3	7.815	NS
	Government employee	4				
	Agriculture	14				
	Daily wages	15				
	House wife	27				
7	**Food pattern**		32.26	1	3.841	NS
	Vegetarian	8				
	Non vegetarian	52				
8	**Family income per month**		4.9	2	5.991	NS
	10001- 20000	15				
	20001-30000	28				
	Rs.30000 above	17				
9	**Duration of marriage**		7.6	2	5.991	NS
	1-3	24				
	4-6	26				
	Above 6	10				
10	**Gravida**		9.6	1	3.841	NS
	Primi	42				
	Multi	18				
11	**Gestational weeks**		39.6	3	7.815	NS
	<12 weeks	18				
	13-24	33				
	25-36	9				
	>37 weeks	0				
12	**Previous knowledge about anemia**		1.666	1	3.841	NS
	Yes	35				
	No	25				
13	**Source of information**		27.334	3	7.815	NS
	Mass media	9				
	Family	13				
	School	32				
	Friends	6				

***Significant at p ≤ 0.05**

Chi square values were calculated to find out the association between pre- test scores on the levels of haemoglobin in among antenatal mothers with their selected demographic variables. It reveals that there was a significant association between pre- test level of haemoglobin associated with demographic variables. (P>0.05). Whereas there was no significant association was found between pre-test scores of levels of haemoglobin with the demographic variables. It

seems that Nutri ball on haemoglobin level was effective to the experimental and control group irrespective of their demographic variables.

Discussion : To assess the pre-test and post- test level of haemoglobin among antenatal mothers at selected PHC Bangalore.

pre- test level of hemoglobin among pregnant mother's 45 %of them are in mild anemia, 55 %of them are in moderate anemia. post- test level of hemoglobin 48.3% mothers had normal haemoglobin,36.7%had 36.7% hemoglobin and 15% had moderate anemia. There is significant difference between pretest and post- test level of haemoglobin among antenatal mothers at selected PHC Bangalore. Hence stated hypothesis accepted.

To evaluate the effectiveness of Nutri ball effect on haemoglobin level among antenatal mothers.the average pre- test scores on the hemoglobin level among antenatal mothers 10.31525and the post- test mean score is 11.85254 The paired 't' value was 2.48 when compared to the table value it was high. This shows that there is significant (at $P<0.05$ level) relationship between pre- test and post- test scores on hemoglobin level among antenatal mother. It shows that nutri ball on haemoglobin level among antenatal mother was effective. And stated hypothesis is accepted

To find out the association between pre-test level of haemoglobin among antenatal mothers at selected PHC Bangalore.; there is nom association with selected demographic variables hence stated hypothesis is rejected.

H3 – There is significant association between the pre- test level of haemoglobin with their selected demographic variables of the among antenatal mothers at selected PHC Bangalore.

Conclusion: the study concludes that post test haemoglobin levels are higher than pretest haemoglobin level hence the nutri ball is effective for pregnant mothers during antenatal period to improve haemoglobin level .

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