



Original Research Article

Impact of health educational intervention among pregnant and lactating mothers in a rural field practice area of Bagalkot: A non randomized interventional trial without control

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ABSTRACT

Introduction: Anemia is very common in Indian subcontinent. In India, according to National Health and Family Survey (NHFS-4), the prevalence of anaemia in India among adolescent girls, 15-19 years is 54.1%. Women during pregnancy are more vulnerable for anemia not only because of the synergistic effects of physiological increase in plasma volume (hemodilution) but also because of increased demand and poor bioavailability of iron in the food.

Objective: To find out the impact of health educational intervention on anaemia among pregnant and lactating women.

Materials and Methods: A non-randomized interventional trial without control study was conducted in the Rural field practice area of Department of Community Medicine, S.N. Medical college, Bagalkot with the Sample size for pregnant and lactating women is 153, for the period of one year (March 2018- June 2019).

Results: There is increase in level of knowledge among pregnant and lactating women regarding anemia after health education intervention and was found to be statistically significant by paired t-test.

Conclusion: Health education is one of the cost-effective method in improving the knowledge among pregnant and lactating mothers.

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1. Introduction

Women during pregnancy are more vulnerable for anemia not only because of the synergistic effects of physiological increase in plasma volume (hemodilution) but also because of increased demand and poor bioavailability of iron in the food, predisposed by social factors like preferential feed for men, being deprived of good food, workload of household.¹

The attitude and knowledge of the pregnant women about anaemia and supplements is probably the missing link and is an important factor as a barrier or motivation for intake of iron supplements which have been made

freely available to all pregnant women.² “Knowledge is the springboard for action.” It is believed that improving awareness motivates behavioral change and it is possible that limited knowledge about anemia interferes with ANC attendance, IFA supplements use, dietary practices, and the use of anti-helminths medicine.³ That is why one of the most effective steps to reduce the prevalence of anemia during pregnancy is health promotion, which is the process of enabling people to improve their health through providing information, health education, and skill training.³

2. Need for the Study

Interventional studies of anemia are not conducted in this part of Karnataka. Hence this study had been undertaken to

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find out the outcome of intervention in the form of health education.

3. Objective

To find out the impact of health educational intervention on anaemia among pregnant and lactating women.

4. Materials and Methods

4.1. Study design

Non-randomized interventional trial without control.

4.2. Study setting

The study was conducted in schools belonging to Rural field practice area of Department of Community Medicine, S.N. Medical college, Bagalkot.

4.3. Description of rural field practice area

It is a well-equipped RHTC with very good infrastructure, well connected by road, east wards from Bagalkot city covering a population of 19119 located 20kilometeres from the medical college. There are 14 anganwadis under this RHTC field practice area.

Sample size for pregnant and lactating women is calculated based on the NFHS-4 survey.¹

By taking the prevalence of anemia among lactating women as 48.1%.

The sample size is calculated by using the formula $N=4pq/d^2$

Prevalence (p)= 48.1%, $q=100-p=100-48.1=51.9\%$, $d=18\%$ of d is 8.658

$$N=4pq/d^2$$

$$=4 \times 48.1 \times 51.9 / 8.658 \times 8.658$$

$$=133$$

$$=140. \text{ (rounded off)}$$

Out of 153 pregnant and lactating women in pretest, 8 women could not be followed up. Therefore, it was possible to collect post test data from 145 women only and loss to follow up is 5.22% (attrition).

4.4. Inclusion criteria

Pregnant and lactating women residing in the field practice area and are willing to give consent.

4.5. Exclusion criteria

1. Those who are suffering from chronic illnesses.
2. Loss to follow up.

4.6. Sampling technique for pregnant and lactating women

All the anganwadis were identified. 153 pregnant and lactating women were identified by the records of the anganwadis. Line listing of the houses, of pregnant and lactating women was done. The first house was selected by lottery method. Subsequent houses were selected continuously, one by one according to Anganwadi center, till all the 153 women were covered in the pretest. 145 pregnant and lactating women were available for the post-test interview. Those who were not found in the first visit, were followed up and subsequent two visits were done to collect the data.

5. Parameters Studied and Techniques Employed

5.1. Duration of the project

March 2018- June 2019.

5.1.1. Phase 1

Activities undertaken in this period were

1. Three link workers were identified and were allocated the respective anganwadis and schools.
2. Link worker training was done by the Program Management Unit (PMU) at Department of Community Medicine, SNMC, Bagalkot, regarding the following topics.
 - a: To identify the study groups i e the pregnant and lactating women
 - b: They were briefed about the overview of the project
 - c: Introduction to nutritional anemia
 - d: How to identify the signs and symptoms of nutritional anaemia
 - e. Methods for health education to pregnant and lactating women. Reporting of the activities to the project headquarter..
3. Briefed the link workers regarding the collection of baseline demographic data and Knowledge of Anaemia (Sources of iron rich foods, clinical features of anaemia, diagnosis, complications, treatment and preventive aspects) through a questionnaire and doubts were clarified regarding how to conduct it.
4. Anganwadi workers were also trained to impart the knowledge about anaemia to the pregnant and lactating women.

6. Method of collection of data for pregnant and lactating women.

Institutional Ethical clearance was obtained

After taking informed consent, baseline sociodemographic information regarding pregnant and lactating women was collected.

Topics for anaemia awareness was allocated to the program management unit team members to prepare in the local language to train the link workers during the training session.

The subtopics under anaemia were:

1. Introduction and signs and symptoms of anaemia.
2. Sources of iron rich foods
3. Diagnosis and complications
4. Management of anaemia (iron and folic acid and albendazole)
5. Prevention of anaemia.

Link workers were trained at Rural Health Training Centre, Shirur by using integrated health education methods such as power point presentations, posters and practical demonstrations in vernacular language i.e. in Kannada.

A predesigned pretested semi-structured questionnaire was prepared in Kannada language The questionnaire contained two parts:

1. Sociodemographic factors: Age, occupation, literacy status, locality, socioeconomic status.
2. Knowledge related questions about nutritional anemia.

The pregnant and lactating women were divided into five groups; each group consists of 35 - 40 members. first group was called on first week at RHTC Shirur. In the first visit pre-test was done and health education was given regarding anemia on the same day by project management team. Then the second group was called in the second week and so on till the fifth group. Continuation of second and third health education sessions were done. 4th session was conducted for post-test evaluation.

Data collection reporting was done by the link workers was reported to the project management unit and later reviewed.

6.1.

6.1.1. Phase 2

Activities undertaken in this period were,

1. Monitoring visits by Program Management Unit (PMU) were done at regular intervals, for reinforcement and monitoring, if they implemented the knowledge from the reinforcement sessions which was done, once every fortnight.

7. Results

We found that more than 50% of the study participants were in the age group of 21 to 25 years, 89% of the participants were Hindu by religion and more than 50% come from nuclear family. With respect to their education, less than 9% are illiterate, 12% have degrees and 21.4% of them completed either diploma or PUC. When it comes

Table 1: Distribution of study subjects according to various socio-demographic factors

	Number	Percentage
Age group(years)		
18 - 20	25	17.2
21-25	83	57.3
26-35	37	25.5
Total	145	100
Religion		
Hindu	129	89
Muslim	15	10.4
Christian	01	0.6
Total	145	100
Family Type		
Nuclear	80	55.1
Joint	61	42.1
Three Generation	04	2.8
Total	145	100
Education		
Illiterate	13	8.9
Up to 10 th class	83	57.3
PUC & Diploma	31	21.4
Degree	18	12.4
Total	145	100
Occupation		
Housewife	116	80
skilled	04	2.8
Unskilled	17	11.7
Semi-skilled	08	5.5
Total	145	100
Socio-economic status		
I	1	0.6
II	6	4.1
III	36	25
IV	58	40
V	44	30.3
Total	145	100

to occupation, 80% of them are housewives, 11.7% are unskilled workers. 70.3% of them belong to class IV & V socio-economic class and 25% belong to class III according to BG Prasad classification.

We found that there is increase in level of knowledge among pregnant and lactating women regarding anemia after health education intervention and which was found to be statistically significant on paired t-test.

8. Discussion

Age range of pregnant women was 21-34 years. Mean age of the pregnant women was 26.6±0.9years. All women belonged to social class 3. All women are literate. Out of 100, 32 women were graduate, 52 women had completed higher secondary schooling and 16 women had completed primary schooling. Out of 100 women, 23 women were working while 77 women were housewife.⁴ Most (n = 212,

Table 2: Change in knowledge among pregnant and lactating women after health education intervention (N=145)

Health education	Mean	Correlation (r)	p value	t value	p value
Pre- test	9.5345	0.53	0.524	-2.83867	0.000
Post- test	13.5				

62.4%) respondents were 20–29 years of age, with mean age of 25.6 (SD ± 5.6), married (n = 288, 84.7%), had a secondary level of education (n = 180, 53.4%), unemployed (n = 167, 49.1%), and earned less than USD 100 per month (n = 305, 93%). Whereas only 5.9% (n = 20) had attained tertiary level of education, among the 28.2% (96) that were in employment, only 3% (n = 10) were formally employed.⁵

We found that more than 50% of the study participants were in the age group of 21 to 25 years, 89% of the participants were Hindu by religion and more than 50% come from nuclear family. With respect to their education, less than 9% are illiterate, 12% have degrees and 21.4% of them completed either diploma or PUC. When it comes to occupation, 80% of them are housewives, 11.7% are unskilled workers. 70.3% of them belong to class IV & V socio-economic class and 25% belong to class III according to BG Prasad classification.

Out of total, only 23% pregnant women had baseline knowledge regarding signs and symptoms of anemia. The same knowledge has been increased to 66% after the intervention and the increase in the knowledge was very significant (p<0.001).⁴ Yassin et al in Alexandria, Egypt where 61.7% of the respondents were found to have poor knowledge of dietary practices in pregnancy.⁶ However a contrary finding was reported by Zeng on the knowledge of nutrition and related dietary behaviors among pregnant women, where 74.9% of the respondents showed good knowledge of dietary practices during pregnancy.⁷ The change in the maternal nutritional knowledge score on anemia and iron rich foods was significantly high in the intervention over control group.⁸ The post-test means of hemoglobin F (1, 132) = 122, p-value <0.001, and hematocrit levels F (1, 132) = 373, p-value <0.001, were significantly different and higher in the intervention group (pictorial handbook) compared to the control group. Similar results were found in knowledge, food frequency score, number of IFA intake (with p-value <0.001).⁹ Women from households without a functional radio (health education) were 2.07 times more likely be anemic (95%CI, 1.08–3.00) compared with women from households where there was a functional radio.¹⁰ We found that there is increase in level of knowledge among pregnant and lactating women regarding anemia after health education intervention and which was found to be statistically significant on paired t-test.

9. Conclusion

In the present study, we found that there is increase in level of knowledge among the pregnant & lactating women

regarding anemia after health education intervention and which was found to be statistically significant. Hence health education is one of the cost-effective methods in improving the knowledge.

10. Recommendations

1. In the present study, health education sessions are conducted by the trained link workers and PMU on anaemia among pregnant and lactating women, we have found a significant increase in the knowledge. Hence similar health education sessions should be continued on regular basis to update the knowledge. This will help in better outcome of the pregnancy and anaemia related complications.
2. Similar studies can be conducted in a larger population so that it will benefit many pregnant and lactating women in rural areas.

11. Source of Funding

None.

12. Conflict of Interest

None.

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