

Effectiveness of Prenatal Education on Awareness Regarding Anemia and its Effect on Health among Primi Antenatal Mothers

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Abstract

Introduction: Anemia is a common problem among pregnant women, and continues to be a major public health problem worldwide with highest prevalence in developing countries. It affects half a billion women of reproductive age worldwide, and in India, prevalence of iron deficiency anemia is highest in the world that is 80%. It's largely preventable and treatable where nutritional education plays significant role, thus present study was undertaken with objectives of testing effectiveness of prenatal education on awareness regarding anemia and its effect on health.

Material and Method: A quasi experimental study was conducted in Pravara Rural Hospital at OBGY OPD of Pravara Rural Hospital among 30 purposefully selected primi antenatal mothers. The prenatal education was implemented to assess the effectiveness on awareness on anemia where pre test and post test design without control group was used. The pre tested (validity, reliability and pilot testing) structured questionnaire was used for data collection. The collected data was analyzed by using descriptive and inferential statistics wherever is required as per the objectives and hypotheses.

Results: The findings of the study revealed that the prenatal education was found effective in improving the awareness on anemia and its effect on health, and was evident from the difference between pretest (8.5 ± 2.21) and post test (18.4 ± 1.06) mean scores which was found statistically significant difference. The chi square analysis showed a statistically significant association between the awareness and variables like age ($\chi^2 = 3.89$) and education ($\chi^2 = 4.16$) at $p < 0.05$ level.

Conclusion: The major conclusion drawn from the study that the prenatal education was found to be cost effective intervention in enhancing the awareness of primi antenatal mothers regarding anemia and its effect on health. The prevention of anemia and its complications are paramount important during antenatal period where the prenatal education plays vital part in early recognition and prevention of anemia.

Keywords: Effectiveness, prenatal education, awareness on anemia, primi antenatal mothers.

Introduction

Anemia in pregnancy is defined as a hemoglobin concentration below 11 g/dl. Iron deficiency anemia is e most common form of malnutrition in the world and is the eighth leading cause of disease in girls and pregnant women in developing countries.^{1, 2}

World Health Organization estimated that the prevalence of anemia in developing countries among pregnant women averages 56% ranging between 35–

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100%, in the year 2009 among different regions of the world. Various studies from different regions of country have reported the prevalence of anemia to be between 33–100%. In India, the prevalence of iron deficiency anemia is highest in the world that is 80% among pregnant women are affected.^{3,4}

Anemia continues to be a major public health problem worldwide with the highest prevalence in developing countries. It is found especially among women of reproductive age, young children and during pregnancy and lactation. Anemia affects half a billion women of reproductive age worldwide. In 2011, 29% (496 million) of non pregnant women and 38% (32.4 million) of pregnant women aged 15–49 years were anemic.⁵

In most of cases, anemia is largely preventable and easily treatable if detected in time. Effective management of anemia includes treatment of the underlying causes, restoration of the hemoglobin concentration to normal levels, and prevention and treatment of complications. Early detection and effective management of anemia in pregnancy can contribute substantially to reduction in maternal mortality.^{6,7}

Nutrition education is an essential to optimize health of women of reproductive age in addition to pregnancy outcomes. Education programs are important as they target at enhancing subjects dietary intakes by promoting behavioral changes such as food choice and cooking ability, goal setting, motivation, and support the efforts for a change.⁸

A study on effect of planned teaching program revealed that the overall gain in knowledge in relation to prevention and management of anemia was found to be strongly and highly significant at $P < 0.01$ and $P < 0.05$ levels in the study group than the control group. It is concluded that planned health education programme helps to improve the knowledge and practices and it should be implemented at all levels, in hospitals and community.⁹

It was proved that along with dietary modification, iron and folate supplementation, the education also plays a significant role in creation of awareness and prevention of anemia among various category of population including the antenatal mothers. Thus the investigator was interested to carry out a study on effect of prenatal education on awareness regarding anemia and its effect on health among antenatal mothers.

Material and Method

It's a quasi experimental study where pretest and posttest design without control group approach was used assess the effect of prenatal education. The study was conducted at Obstetrics and Gynecology Out Patient Department of Pravara Rural Hospital, Loni (Bk) Maharashtra, among 30 purposively selected primi antenatal mothers. Study was approved by the Institutional Ethics/Research Committee of PIMS (DU), and protocol of study was explained to the participants and written informed consent was obtained before the enrollment. The antenatal mothers who are above 18 years of age, and willing to participate (consent) were included in the study. The pre tested structured questionnaire was used to assess the study variables, the tool was comprised of a) socio demographic data (06 items) b) maternal characteristics (06 items) and dichotomous knowledge questionnaire (25 items) respectively, and correct answer carries 1 score and wrong answer carries score of 0, and maximum score is 25 wherein the awareness level was categorized as poor, average and good.

The prenatal education consists of a) introduction b) risk factors/causes of anemia c) effect of anemia on health d) identification e) treatment of anemia f) preventive strategies and g) dietary requirements. The education was carried out individually via lecture and discussion method for 30 minutes for two times during antenatal visits. Along with education the educative materials such as leaflet, pamphlet also was supplemented for reinforcement and compliance. After the pre test, the prenatal education was implemented individually, and the evaluation i.e. post test was carried out on follow up visits with help of same structured questionnaire. The collected data were complied, tabulated and analyzed based on objectives/hypotheses with help of descriptive (mean, SD and mean %) and inferential (t test, chi square test) statistical method wherever required.

Results

Socio demographic profile of primi antenatal mothers: Half (50%) of primi antenatal mothers were 21–25 years of age and significant percent (37%) were < 21 years of age, half (50%) of them had up to secondary school education, followed by (27%) had higher secondary education as a highest educational qualification. Half (50%) of participants were home makers and (27%) of them were engaged at agricultural work. One third (33% and 30%) of primi antenatal

mothers had monthly income less than Rs 3000 and Rs 3001 –6000 respectively, significant proportion (27%) had income Rs 6001 –9000. More than half (53%) of them were belongs to nuclear family and (40%) were belong to joint family system. Majority (83%) of primi antenatal mothers were belongs to Hindu and the remaining (17%) were belongs to Muslim religion.

Maternal characteristics primi antenatal mothers: Higher percent (46%) of primi antenatal mothers were had more than 37 weeks of gestational age, majority (67%) of them had less than 60 Kg of maternal body weight. Higher percent (57%) of participants consumed mixed diet and (43%) consumed vegetarian diet. Around (53%) of them had three antenatal visits and the remaining had first and second antenatal visits respectively. Most (93%) of primi antenatal mothers were immunized (Inj. TT) as per the mandatory vaccination

requirements. A significant percent (13%) and (7%) of them had diabetes and hypertension respectively as co morbid illness.

Effectiveness of prenatal education on awareness on awareness regarding anemia and its effect on health: It was illustrated from the depicted table that the overall post prenatal education awareness mean score was score (18.4 ± 1.06) which is 73.6% of total score indicates primi antenatal mothers had ‘good’ level of awareness, wherein during pretest it was found ‘average’ awareness with mean score (8.5 ± 2.21) which was 34.1% of total score. It suggest the effectiveness of prenatal education (39.5%) in improving the awareness on anemia and its effect on health among primi antenatal mothers and found statistically significant ($t = 9.56$, $p < 0.05$ level).

Table No 1: Effectiveness of prenatal education on awareness of anemia

Areas	Pre test			Post test			‘t’ value
	Mean	SD	Mean %	Mean	SD	Mean %	
Introduction to anemia	2.7	1.41	33.7	6.2	1.21	77.5	5.48*
Effect of anemia on health	2.4	1.36	34.2	5.1	0.72	72.8	4.81*
Treatment of anemia	2.1	1.17	35.1	4.2	0.71	70.1	3.89*
Dietary requirements of anemia	1.3	0.88	32.5	2.8	0.58	70.1	3.82*
Overall	8.5	2.21	34.1	18.4	1.06	73.6	9.56*

df –29, *Significant, $p < 0.05$

Table No 2: Association between post test awareness with their selected socio demographic and clinical variables

S.No.	Variables	χ^2 value	Level of significance
1	Age	3.89	Significant
2	Education	4.16	Significant
3	Type of family	1.37	Not significant
4	Gestational age	0.82	Not significant
5	Antenatal visit	1.75	Not significant

df = 1 Table Value 3.84 ($p < 0.05$)

It was found that there was statistically significant association between the awareness and socio demographic variables like age ($\chi^2 = 3.89$) and education ($\chi^2 = 4.16$) at $p < 0.05$ level, and other variables did not had any association between variables.

Discussion

The overall post test mean score of awareness on anemia and its effects on health was (18.4 ± 1.06) which

is ‘good’ level of awareness, wherein during pretest it was found ‘average’ level of awareness with the mean score of (8.5 ± 2.21) and the effectiveness was 39.5%. Similarly all the sub sections also had ‘good’ level of awareness and the effectiveness was ranged from 35% to 43.8%. It highlights that prenatal education was effective in improving the awareness on anemia and its effect on health among primi antenatal mothers. This finding was consistent with the study done by

Khoramabadi M, Dolatian M, Hajian S, Zamanian M, Taheripناه R, Sheikhan Z et al that the prenatal dietary education increased the knowledge from the mean score of (9.21 ± 3.8) to (18.9 ± 2.6) and found significant at $p < 0.001$ level.¹⁰ Similarly Rasheed S and Mary CZ also noticed in their study that in pre test (53%) of antenatal mothers have inadequate knowledge wherein after the teaching program the knowledge assessment showed (78.5%) have adequate knowledge, and mean post test knowledge score was higher than the pre test score.¹¹

Paired t test value depicts that there was a statistically significant difference was found between pre test and post test awareness scores on anemia and its effect on health at $p < 0.05$ level, which was a true difference and not by chance. Similarly Rasheed S and Mary CZ noticed planned teaching program was highly effective to improve the knowledge on anemia and its management among antenatal mothers, the 't' value were found significant at $p < 0.001$ level.¹¹

A significant association was found between the post test awareness scores and demographic variables like age ($\chi^2 = 3.89$) and education ($\chi^2 = 4.16$), whereas other variables such as type of family, gestational age and antenatal visits did not had any association at $p < 0.05$ level.

As emphasized through study findings that use of education and mass media's such as videos for education and training enhances the knowledge and comprehensive understanding of health and case aspects. Thus it is important to use variety of educative materials for antenatal mothers education and follow up visits etc.

Conclusion

The findings demonstrated that the prenatal education was found to be cost effective intervention in enhancing the awareness of primi antenatal mothers regarding various aspects related to anemia and its effect on health. The awareness leads to comprehensive understanding of anemia and its effect on health along with prevention etc. Thus it should be emphasized that having educational sessions with antenatal mothers and their care givers/family members regarding anemia would thereby improve their awareness which leads to early recognition of symptoms, treatment and prevention of complications. The prevention of anemia and its complications are paramount important during antenatal period where the prenatal education plays vital part in early recognition and prevention of anemia.

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Conflict of Interest: Nil

Ethical Clearance: The study was approved by the Institutional Ethics/Research Committee (IEC/IRC) of PIMS (DU) and the ethical principles were followed while conducting a study.

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