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Research Paper | Home Science

Impact of Maternal Nutrition Education Module on Nutritional Knowledge And Status in Rural Pregnant Women

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ABSTRACT

Preventive maternal health care is beneficial for pregnant woman and her baby as pregnancy is a link between two generations. Routine antenatal care as given today needs innovative changes for better care of pregnant women. Nutritionist can contribute significantly by imparting nutritional education in tandem with health care. The objective of the present study was therefore, to assess the impact of an innovative maternal nutritional education module developed by nutritionist; on nutritional knowledge and nutritional status of rural pregnant women. 180 rural pregnant women in 1st trimester of pregnancy were selected. Their nutritional knowledge status and nutritional status were assessed. Maternal nutritional education was imparted using a specific educational module by the researcher, with the help of trained nurses. Post education status of the knowledge and nutritional status were assessed. Low, medium and high K level was observed in 86.11%, 13.89% and 0.00% respectively at pre education stage. At the post education stage these changed to 12.78%, 57.78% and 29.44% respectively with pre and post CV of 37.15 and 23.01 respectively. This indicates significantly positive impact on maternal nutritional knowledge due to the module. Percent change in knowledge (with CV of 61.49%) implied significantly positive impact of the educational module. Nutritional status assessment shows that at pre-education stage severely abnormal, moderately abnormal, mildly abnormal and normal status was present in 22.22%, 54.44%, 16.67% and 6.67% respectively. The education brought about change in corresponding status to 5.56%, 15.56%, 52.22% and 26.66% respectively. Marked reduction was observed in severely and moderately abnormal category along with significantly positive improvement in mildly abnormal and normal category. It can be concluded that innovative and specific maternal nutritional education module had brought about significant positive improvement in maternal nutrition knowledge and Nutritional status.

KEYWORDS: Maternal nutrition education module, Maternal nutritional, knowledge, Maternal nutritional status

Preventive maternal health care benefits pregnant woman and her baby as pregnancy is a link between two generations. Currently, health care includes medical care and nutritional care because health and nutrition are two sides of the same coin. Nutritional care through proper nutritional education during early pregnancy maximizes the benefits reaped by mother and baby, in present and subsequent pregnancies.1

Improvement in maternal nutritional status can be a major contribution of nutritionist in a multipronged approach for overcoming the scourge of low birth weight (LBW) babies2. Presently, majority of qualified nutritionists are women. They can understand needs and difficulties of pregnant women in a naturally better way. The percentage of underweight infants in India was about 32.00 percent in 1997 (Source, Human Devpt. Report, 1999). It is a direct indicator of malnourishment levels. It indicates that, India has a long way to go with regard to improving the health status of pregnant women in the country.3. Various schemes for supplying nutritious food material to expectant mothers are in existence in India; but, they serve a limited and temporary purpose. If pregnant women are educated about maternal nutrition, there can be much better and longer lasting improvement in their nutritional status, because such education will bring about improvement in their knowledge and practices about maternal nutrition.4 A nutrition education module innovatively designed and developed by a nutritionist, specifically for pregnant women and implemented with the help of trained women like Ante natal Nurse Midwife (ANM) can be very helpful for pregnant women.

During the last 50 years, there have been some impressive gains with respect to women's life expectancy at birth. But while more women are surviving, available evidence points to only a marginal improvement in the health and nutritional status of women 5.

Studies made at Harvard University concluded that, a mother's nutritional status at the onset of pregnancy is an important factor in determining the condition of the infant at birth. This fact highlights the great need of nutritional education, so that women will understand the importance of good nutrition for a successful pregnancy. Pregnancy is a period of considerable stress, which calls for additional requirement of nutrients. It becomes essential that, this group of population be ensured with sound nutritional care and be able to perceive the importance of maternal nutrition.

This study therefore, was aimed at assessing impact of maternal nutritional education module developed by the Nutritionist, on nutritional knowledge and nutritional status of rural pregnant women.

Methodology

The present study was based on data collected from Rural Primary Health Centers (PHC) around Akola city. From a larger group of pregnant women 200 were selected for the study. All of them were in first trimester of pregnancy and willing to followup for minimum period of 6 months. Nutritional knowledge and nutritional status of the respondents were assessed prior to providing nutritional education. Detail nutritional education in simple and easy to understand by using an innovative maternal nutritional education module developed by the researcher and after 6 months the impact on nutritional knowledge level and nutritional status were reassessed. Only 180 respondents were accessible for post education assessment and hence the corresponding data of pre education assessment for these 180 respondents was assessed from the master data.

Knowledge (K) : Conceptually K is state in which an individual is exposed to the innovative existence of a certain thing or concept and gains some understanding of what it is and how it functions. K has been taken to mean as state of respondent when there is an understanding about maternal nutrition. K status of the respondents before and after imparting health and nutritional education was assessed, with the help of a knowledge questionnaire, which was based on basic health and nutritional factors during pregnancy. The K level was assessed with the help of 40 questions itemwise K test. Each question in this test was given weightage score. Pre and post education weigheted score was calculated for each correct response and the K-levels were assessed.

The impact of maternal health and nutritional education on the respondents was evaluated as Knowledge Quotient (KQ).

$$KQ = \frac{\text{Obtained weighted K score}}{\text{Obtainable weighted K score}} \times 100$$

The respondents were divided in 4 groups on the basis of KQ level.

Sr. No.	Group	Level
1	0	Nil
2	1-33	Low
3	34-66	Medium
4	>66	High

$$\text{Percent change in K} = \frac{\text{Change in K score}}{\text{Pre KQ score}} \times 100$$

Nutritional status "Is the condition (State) of health of an individual as influenced by the utilization of nutrients in his/her body". Nutritional status was accepted as a parameter of maternal health and was assessed by dietary intake, anthropometry, clinical examinations and biochemical tests for nutritional deficiency disorders.

Results and Discussion :

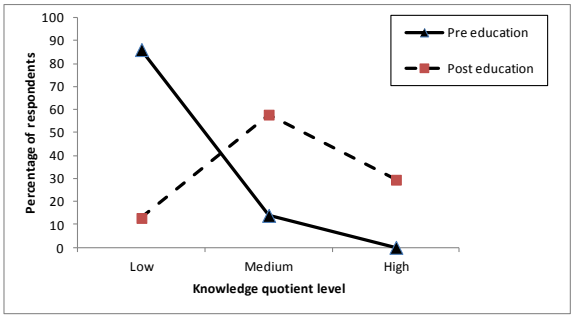
Knowledge level is a very important parameter in assessing the impact of nutritional education. Pre and post education K levels are presented in Table 1.

Table 1 : Distribution of respondents according to K level

Sr. No.	K level	Respondents N = 180			
		Pre education		Post education	
		No.	%	No.	%
1	Nil	00	0.00	00	0.00
2	Low	155	86.11	23	12.78
3	Medium	25	13.89	104	57.78
4	High	00	0.00	53	29.44
	Total	180	100.00	180	100.00
	Mean	19.56		59.15	
	SD	7.27		13.61	
	CV	37.15		23.01	

(Chisquare = 199.26)

Medium and high K level was observed in 84.44 percent, 15.56 percent and 0.00 percent respectively at pre education stage. At the post education stage these values changed to 4.44 percent, 58.33 percent and 37.33 percent in low, medium and high K level respectively.



Assessment of impact of education imparted to the respondents in terms of percent change in knowledge was calculated.

Table 2 : Distribution of respondents according to their percent change in K

Sr. No.	Level of percent change in K	Respondents N = 180	
		No.	%
1	Low	00	0.00
2	Low Medium	20	11.12
3	Medium	76	42.22
4	High Medium	35	19.44
5	High	49	27.22
	Total	180	100.00
	Mean	242.00	
	SD	148.81	
	CV	61.49	
	Chi.square	3.42	

It is obvious that there was significant percent change in knowledge. The mean value was 242.00 with SD 148.81 and CV 61.49. Maximum percent change (42.22%) was observed in medium level where as it was minimum in low medium level (11.12%). These findings indicate that there is significantly positive impact of maternal nutrition education module on percent change in K of rural pregnant women.

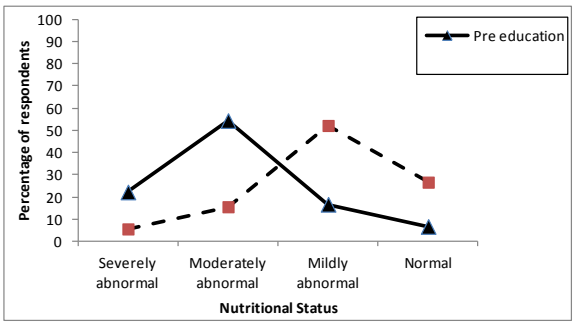
Nutritional status of pregnant women has direct impact on well being of mothers and foetus.6 Mothers with abnormal nutritional status were consuming less than 35 gms protein and less than 20 mg iron per day. Hence about 50% respondents had anemic status.7

Nutritional status level indicates category of severity of malnutritional status. Assessment of nutritional status before and after imparting nutrition education yielded its impact.

Table 3 : Impact of nutrition education on nutritional status level.

Sr. No.	Category	Nutritional Status level (N=180)			
		Pre education		Post education	
		No.	%	No.	%
1	Severely abnormal	40	22.22	10	5.56
2	Moderately abnormal	98	54.44	28	15.56
3	Mildly abnormal	30	16.67	94	52.22
4	Normal	12	6.67	48	26.66
	Total	180	100.00	180	100.00

Severely abnormal, moderately abnormal, mildly abnormal and normal nutritional status was present in 22.22 per cent, 54.44 per cent, 16.67 per cent and 6.67 per cent respondents at pre nutritional education stage. The education brought about a change which at the post education stage was correspondingly 5.56 per cent and 15.56 percent, 52.22 per cent and 26.66 per cent respectively.



Marked reduction from 22.22 per cent to 5.56% increase of severely abnormal category and from 54.44 per cent to 15.56 per cent in moderately abnormal category reflects in the positive impact of nutritional education on respondents nutritional status.

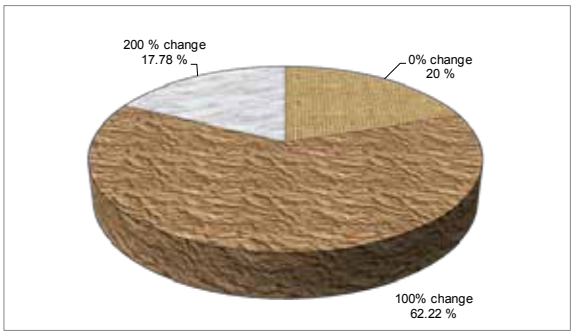
The education improved the severely abnormal and moderately abnormal status of respondents, thus, shifting them into better categories of nutritional status. Hence the percentage of respondents in mildly abnormal and normal categories was more at post education stage, compared to pre education stage. Better results can be achieved by ongoing nutrition education of pregnant women. Nutrition education improves knowledge of pregnant women, thereby giving a boost to improvement in their nutritional status 8,9,10.

Percent change in nutritional status of the respondents gives clear idea about impact of nutritional education on their nutritional status. The same have been shown in Table 4.

Table 4 : Impact of nutritional education on percent change in nutritional status

Sr. No.	Percent change in nutritional status	Respondents N = 180	
		No.	%
1	0	36	20.00
2	100	112	62.22
3	200	32	17.78
4	> 200	00	00.00
	Total	180	100.00

Majority (62.22%) respondents had 100 per cent change in their nutritional status, 6 months after nutritional education. 20 percent had no change where as 17.78 per cent had 200 per cent change in nutritional status.



Conclusions and Implications:

Rural pregnant women have low knowledge level about nutrition during pregnancy. Proper maternal nutrition education brings about significant improvement in their knowledge level when delivered through a specially designed educational module. Nutrition education coupled with knowledge gain and its consequent benefits improves nutritional status of the pregnant women. If educated in first trimester majority of the pregnant women reaped rich benefits of nutrition education in a period 6 months. Maternal nutrition education on a wider and ongoing scale can benefit pregnant women and their babies. The knowledge gain may benefit them in subsequent pregnancies.

The knowledge benefits may get passed on from the pregnant women to her relatives and friends, thereby having a cascade of beneficial effects in the society.

Innovative maternal nutrition education modules when developed by qualified women nutritionists, for women in need, can be more beneficial if translated into vernacular languages and widely implemented.

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