A study to determine the effectiveness of nutritional intervention for anaemia on maternal and fetal outcomes among antenatal women in selected villages in Trichy District

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ABSTRACT

Purpose: To determine the effectiveness of nutritional intervention for anaemia on maternal and fetal outcomes among antenatal women in selected villages in Trichy district, Tamil Nadu State, South India.

Research Design: A quasi experimental, non-equivalent posttest only control group design was used.

Methods: The target population of the study was the antenatal women residing in the villages under the two government primary health centres namely Vaiyampatti, and Chettiappattu primary health centres. The convenient sampling technique was used to select the two PHCs and for allotting PHC for experimental and control group and also for selecting villages for both the groups under two PHCs. The study samples from the villages of the experimental and control group were selected using purposive sampling technique. A total number of 150 antenatal women were selected for the study, 75 in the experimental group and 75 in the control group. Conceptual framework of this current study was based on the General System Theory by Ludwig von Bertalanffy (1968).
The instruments used for the study consisted of background variables, maternal and fetal outcome instrument and structured interview schedule. The data were collected from the records of the antenatal women in the PHCs and by interview technique with antenatal women. Descriptive and inferential statistics (Chisquare, independent t-test, paired t-test, and Pearson correlation, multiple regression analysis, and ANOVA) were used.

**Findings:** The nutritional intervention was found to be effective in improving primary maternal outcomes (Hb and knowledge on Iron Deficiency Anaemia) among antenatal women with anaemia. The study found that there was a highly significant difference (p<0.001) in the mean difference scores of maternal Hb as well as posttest mean Hb score between control and experimental group. On posttest, 2.66% and 13.33% of the antenatal women in the control group and experimental group had normal Hb level (≥ 11gm/dl). Regarding knowledge, there was a highly significant difference (p<.001; Mean difference = 8.16) in the posttest mean scores of knowledge on IDA among antenatal women between the control and experimental group. There was gross inadequacy of knowledge on IDA among antenatal women in the control group (78.7%), whereas in the experimental group, after nutritional health education, the level of knowledge was either adequate (48%) or moderately adequate (52%).

The effect of nutritional intervention was insignificant on secondary maternal outcomes, maternal weight and premature labour. The other secondary maternal outcomes, the incidence of APH, primary PPH were absent in both groups.
Nutritional intervention was not effective in improving primary fetal outcome (Birth weight). There was no significant difference in birth weight of the newborns between the control and experimental group. 20% and 12% of the newborns in the control and experimental group had birth weight < 2500gms which is 8% increase in low birth weight in the control group and was found statistically insignificant.

Regarding secondary fetal outcomes, 4% and 2.77% of the antenatal women in the control and experimental group had premature newborns. The other secondary fetal outcomes, still birth and perinatal mortality were absent in both groups. All of the newborns had good APGAR score.

Significant positive correlations were found in the experimental group between: haemoglobin and maternal weight; haemoglobin and knowledge on IDA; maternal weight and knowledge. In the control group, significant positive correlations were found between: haemoglobin and maternal weight; haemoglobin and birth weight; maternal weight and birth weight.

In the experimental group, there was a significant association between: maternal weight and type of family; premature labour/prematurity and total family income; knowledge on IDA and religion; gravida, birth spacing and birth weight. In the control group, maternal weight was significantly associated with the use of cheppals; maternal Hb with number of IFA tablets consumed.

**Conclusion:** The nutrition intervention (Amaranth leaves and guava) given along with nutritional health education to the antenatal women is an effective method
in improving maternal Hb and knowledge of the antenatal women on IDA. The modified nutritional intervention recipe with large sample size may be needed to find out the effect on the birth weight of the newborns, secondary maternal and fetal outcomes.