

Effectiveness of Structured Teaching Programme on High Risk Factors to Reduce Maternal Mortality among Mothers in Primary Health Centers in Bijapur District

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Abstract

A true experimental pre-test post-test research was conducted to evaluate the effectiveness of structured teaching programme on high risk factors to reduce maternal mortality among mothers in primary health centres in Bijapur district. 500 (250 experiment group & 250 as control group) pregnant mothers in second trimester were selected through multistage sampling technique. Structured interview schedule was used to collect data. Subjects were educated regarding, anatomy & physiology of reproductive system, physiology of pregnancy, Physiology of all three stages of labour, Physiology of puerperium, Characteristics of normal new born, Pre-pregnancy risk factors, Intranatal risk factors, Postnatal risk factors, Common risk factors existing in the study area, Immunization schedule, Breast feeding. Post-test was carried out on seventh day Pre-test and posttest knowledge score were analyzed using 't' test with mean and standard deviation of 33.924 ± 8.513 . t score of 42.169 signifies that education was effective at $p < 0.005$. Knowledge score association with demographic variables such as duration of marriage, type of marriage family size and number of earning members of the family using Chi-square test were significant at $p < 0.05$ level.

Keywords: Knowledge; High risk factors; Maternal mortality.

Introduction

"Whose faces are behind the numbers? What were their stories? What were their dreams? They left behind their children and families. They also left behind clues as to why their lives ended so early"

Maternal health refers to the health of women during pregnancy, childbirth, and the postpartum period. It encompasses the health care dimensions of family planning, preconception, prenatal and postnatal care in order to reduce maternal morbidity and mortality. Preconception care can include education, health promotion, screening and

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other interventions among women of reproductive age to reduce risk factors those might affect future pregnancies. The goal of prenatal care is to detect any potential complications of pregnancy early, to prevent them if possible, and to direct the woman to appropriate specialised medical services as appropriate. Postnatal care issues include recovery from childbirth, concerns about newborn care, nutrition, breastfeeding, and family planning.

As per the Karnataka state report 2005-2009¹ maternal mortality ratio (SRS 2004-2006)² was 213 and in India it was 254. National Rural Health Mission Report of the 2nd Common Review Mission¹⁵ reveals that the MMR in 2008-09 was 190 and it has reduced to 178 in 2009-2010. (Family welfare statistics 2011)³ Apart from male baby preference, high fertility in northern Karnataka is also countered to high maternal mortality, it is not considered unusual for a woman to have repeated miscarriages or abortions, the reasoning being that if a pregnancy is lost, a woman can always get Pregnant again (Umamani & Yogananda 2003)⁴ maternal deaths have represented only the extreme end of a continuum of underlying maternal morbidity.

(The Controller and Auditor General of India report for 2011)^{5,6} records what it calls an “alarming” trend in Tumkur and Koppal. While the maternal deaths in Tumkur showed an increase from 119.2 in 2009-10 to 142.27 in 2010-11, the jump was from 157.24 to 208.84 in the same period in Koppal. The MMR in Tumkur was 99.55 in 2006 and 155.65 in Koppal. In contrast, the Sample Registration System (SRS) of 2007 to 2009⁷ shows the MMR at a State average of 178, which is an impressive improvement over 213 recorded in the previous SRS.

In districts of Yadgir, Gulbarga, Bidar, Raichur, Koppal, Bijapur and Bagalkot the MMR was bad based on the education and health indicators. The maternal deaths were mainly due to anemia, hypertension, non-availability of blood banks to administer blood, absence of doctor and staff nurse in primary health centers at the time of delivery, etc.

The personal experience of investigator and through literature review receded that the education on high risk factor is important to make the women to identify the risk factor at earliest and seek medical help to prevent maternal mortality. So the study was designed to identify the need for accurate information required by the mother on high risk factors through pre and posttest and planned teaching programme.

Objectives of the study

1. To assess the pretest knowledge of mother regarding high risk factors to reduce maternal mortality.
2. To assess the post test knowledge of mother regarding high risk factors to reduce maternal mortality.
3. To find out the effectiveness of structured teaching programme on knowledge of mothers regarding high risk factors to reduce maternal mortality.
4. To find out the association between pretest knowledge score and selected demographic variables

Methodology

Research Approach

Quantitative research approach was used for this study.

Research design

A True experimental pre-test and post test design was used.

Research setting

The study was conducted in selected Primary health centers of Bijapur district.

Sampling and sample size

Multi stage sampling technique was used for selecting the two PHC's for the study. With the help of simple random technique (lottery method), five sub centres from Nagtan (control group) and five sub centres from Bableswar (experimental group) PHC was selected. 50 subjects were selected from the each sub centres & allotted 250 as control, 250 as experiments each with the help of multi stage sampling technique.

Sample of the study

The Sample of the study comprised of II trimester mothers in selected primary health centers such as Nagtan and Bableswar primary health centers of Bijapur District.

Tool description

Part I: Socio-Demographic schedule consists of 14 demographical variables and 30 biological variables.

Demographic variables: Consists of information related to Age, religion, education (husband & wife), occupation (husband & wife), income, type of family, number of earning members in the family, family monthly income, transportation, duration of married life, type of marriage and habits.

Biological variables: Consists of information related to height, weight, Hb, B.P, Bad Obstetrics history, Parity, Any surgical history, Previous obstetrical history, Year of last delivery, Spacing between children, Any abortion, Antenatal case registered, TT immunization taken, Place of delivery, Type of delivery, Delivery conducted by, Condition of baby at birth, Weight of the baby at birth, Brest feeding, Immunization, Postnatal condition, condition of children, Present obstetrical history, Week of gestation, Anc registered, Immunization with TT, B/OH, Abortion (week of gestation), Weight gain during pregnancy, Minor ailments, Plan of delivery.

Part II: Structured interview schedule which consists of 46 items distributed under 9 sub section on high risk factors. The items were based on various aspects of pregnancy, labour and puerperium. Each item consists of 5 questions and last item on breast feeding and immunization had 6 questions. These 46 items were related to Anatomy & physiological of reproduction, Normal pregnancy, Normal delivery characteristics of normal baby, Factors causing high risk before Pregnancy, Intranatal risk factors, Postnatal Factors causing high risk, Pregnancy complication, Breast feeding and immunization.

Results

Distribution of Demographic Variables

Age: With regard to age majority of the respondents are with the age group of 15-22 yrs i.e. 66.8% and 74.0% in control group and experimental group.

Religion: Regarding religion majority of the respondents are with the religion of Hindu i.e. 59.6% and 62.8% in control group and experimental group respectively.

Education: Most of the respondents are illiterates 40% in control group and 33.2% in experimental group.

Education of husband: Majority of the husband of both groups had high school education i.e. 34.0% and 37.3% in control group and experimental group respectively.

Regarding occupational status of mothers: Majority of the mothers were unskilled in their work in both the groups' i.e. 95.2% in control group and 94.4% in experimental group.

Occupation of husband: Regarding occupational status of respondents husbands, majority of them were unskilled in both the group i.e. 72.0% in control group and 54.8% in experimental group.

Income: Majority of the respondents, family income exists between Rs.1501 to 2500 i.e. 53.2% in control group and 40.0% in experimental group. Agriculture is the only source of income.

Type of family: Majority of the respondents were from joint family i.e. 69.2% in control group and 70.8% in experimental group.

Number of family members: Majority of the respondents in control group 36.0% belong to family size of 7-8 members and majority of them in experimental group 41.3% belong to family size of 5-6 members.

Number of earning members in the family: Majority of the respondents in both groups had 1-2 earning members. In control group i.e. 80.4% and in experimental group i.e. 64.0%.

Duration of married life: Majority of the respondents in control group i.e. 47.6% belongs to below one year of married life and majority of them in experimental group i.e. 64.4% belongs to 1-3 years of married life.

- Regarding type of marriage majority of the mothers were with non-consanguineous marriage in both the groups i.e. 58% in control group and 62% in experimental group.

Food habits: Regarding types of food majority of the mothers were with vegetarian diet in both the groups i.e. 50.4% in control group and 45.6% in experimental group.

Transportation: Majority of the mothers depends public transportation services in both the groups i.e. 86% in control group and 89.6% in experimental group.

Habits: Regarding habits majority of the mothers were not at all using any substances in both the groups i.e. 80.4% in control group and 71.2% in experimental group.

Biological Variables

Height: Majority of the respondents in control group i.e. 62% and 44.8 in the experiment group were with the height of 150-160 cm.

Weight: majority of the mothers were with 45-55 kg in the control group i.e. 35.2% in control group and 23.2% in experimental group were with 55-60 kg.

Haemoglobin: Majority of the respondents were with hemoglobin of 9-11 gm in the control group and experiment group i.e. 59.2%. According to.

- **Parity:** Majority of the respondents were primigravida i.e. 61.6% in control group and 38.4% in experiment group.
- **Surgical history:** Majority of the respondents were not having any surgical history i.e. 94.0% in control group and 95.6% in experimental group.

Abortion: Majority of the respondents in control group 97.2% and 98.4% in the experiment group were not having threatened abortion in present pregnancy.

- **Minor Ailments:** Majority of the respondents had minor ailments in pregnancy 84.0% in control group and 53.2% in experimental group.

Discussion

Findings Related to Socio-Demographic Variables

Income: Majority of the respondents, family income exists between Rs. 1501 to 2500 i.e. 53.2% in control group and 40.0% in experimental group. Agriculture is being the only source of income;

women need to depend head of the family for their economic needs. This dependence cause, fear, shame and the cultural norms make women to get withdraw from her health needs.

According to Vidynallatha B and Sen G *et al.* lack of knowledge of mothers, illiteracy, and poor socio economic status, biased gender norms, poor nutrition, is responsible for the risk factors of pregnancy and its outcome. Results revealed that there is proportionate relationship between the demographics variables and maternal mortality rate.

Findings Related to Assessment of Knowledge [Table 3]

In this study, it was observed from the findings that the pre-test 9.771 and post-test 9.824 knowledge mean scores with negligible difference of knowledge mean score in control group which did not receive structured teaching programme, hence the first research hypothesis (H_1) is rejected.

Further it is also observed that pre-test 9.838 and post-test 35.588 knowledge mean scores with a considerable difference of knowledge mean score in the experimental group which received structured teaching programme, hence the second research hypothesis (H_2) is accepted [Fig. 1].

Findings related to effectiveness of structured teaching programme on knowledge. [Table 2 & Figure 2]

It is observed from the findings that the knowledge mean score 9.816 in pre-test as compared to knowledge mean score i.e. 33.924 in post-test. It is interesting to note that the enhancement in the knowledge mean score found to be 24.108 between pre-test and post-test of experimental group.

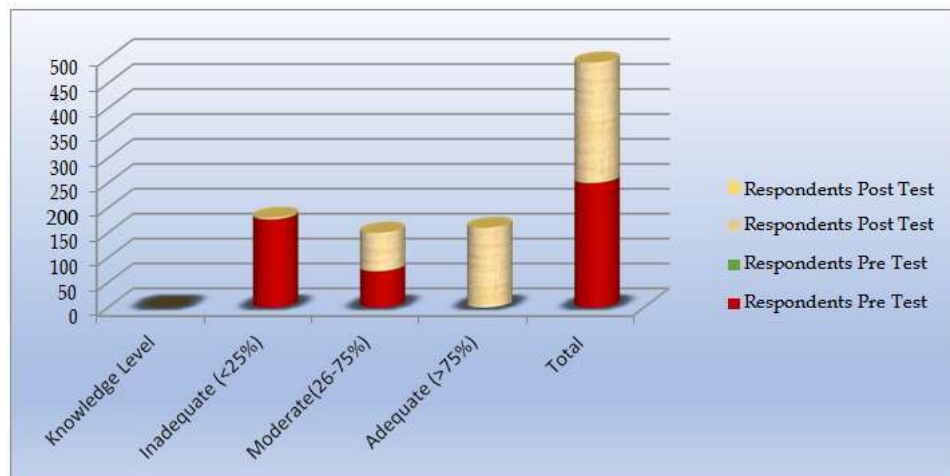


Fig. 1: Pre-test and Post-test Knowledge level of experiment group on high risk factors to reduce maternal mortality

The 't' value was computed and found to be statistically significant i.e. (t=42.169** at p<0.005 indicating that the effect of structured teaching programme, hence the second research hypothesis (H₂) is accepted.

The findings of the study is supported by Arun Jyothi Baruach and Dr. Pradip Sharma where the mean post- test knowledge score was found to be significantly higher than their pre-test knowledge score t (59)=15.92. Indicating that the planned teaching programme is effective in increasing the knowledge of the participants.

The computed 't' value reveals that the enhancement of the dimension wise knowledge mean score is found to be statistically significant at 5% level.

Findings related to association of knowledge with selected socio-demographic variables

There was significant association found at 0.05 level between pre-test level of knowledge score of pregnant mothers and their selected socio-demographic variables i.e. duration of marriage, type of marriage family size and number of earning members of the family at 0.05 level, Hence it can be interpreted that the pre-test knowledge score of pregnant mothers regarding high risk factors

of pregnancy to reduce maternal mortality was depend up on the above mentioned factors. Few demographic variables are significantly associated with knowledge score, hence the third research hypotheses is partially accepted.

The findings of the study are supported by Sen G *et al.* there is proportionate relationship between the demographics variables and maternal mortality rate.

Limitation

Only 250 pregnant mothers for control group and 250 for experimental group were considered. Extraneous variables like age, parity, lack of health facility, poor income, lack of transportation, educational level and occupation was beyond the Investigator's control.

Implications

Nursing Practice

Nurses play an important role in the reduction and prevention of maternal mortality and morbidity among mothers in all community settings.

The study also suggests that there is a need for reinforcement of structured teaching programme on maternal mortality and morbidity. If the nurses

Table 1: Dimension wise Knowledge Mean scores of Pre-test and Post-test on high risk factors to reduce maternal mortality: Control Group. n=250

S.No	Dimension	Statements	Knowledge Score			
			Pre-test		Post-test	
			Mean	S.D	Mean	S.D
1.	Anatomy & Physiology of reproductive system	6	1.612	0.899	1.584	0.916
2.	Normal Pregnancy	5	1.696	1.099	1.672	1.118
3.	Normal delivery	5	1.560	0.909	1.532	0.928
4.	Characteristics of normal new born	5	0.972	0.862	0.948	0.860
5.	Factors Causing High Risk before Pregnancy	5	0.980	0.946	0.964	0.950
6.	Intra-natal Risk Factors	5	0.592	0.767	0.584	0.768
7.	Post-natal Factors Causing High Risk	5	0.528	0.701	0.528	0.701
8.	Pregnancy Complication	5	0.464	0.689	0.448	0.682
9.	Immunization and Breast Feeding		1.384	1.157	1.368	1.162

Table 2: Findings related to effectiveness of structured teaching programme on knowledge.

n=250

Aspects	Knowledge Scores				Paired 't' test
	Mean	SD	Mean (%)	SD (%)	
Pre-test	9.816	2.961	21.33	06.4	42.169**
Post-test	33.924	8.513	73.7	18.50	
Difference between pre and post test	24.108	5.552	52.40	12/07	

** Significant at 5% Level



Fig. 2: Knowledge Mean and SD scores of Pre-test and Post-test

Table 3: Dimension wise Knowledge Mean and SD scores of pretest and posttest of Experimental Group on high risk factors to reduce maternal mortality: n=250

Dimensions		Mean	SD	Mean Difference	t - value
Anatomy and Physiological of Reproduction	Pre-test	1.652	0.889	2.820	26.426**
	Post-test	4.472	1.403		
Normal Pregnancy	Pre-test	1.708	1.101	2.348	23.290**
	Post-test	4.056	1.150		
Normal Delivery	Pre-test	1.560	0.900	1.560	18.038**
	Post-test	3.120	1.120		
Characteristics of Normal Baby	Pre-test	0.968	0.850	2.448	27.103**
	Post-test	3.416	1.135		
Factors Causing High Risk before Pregnancy	Pre-test	0.964	0.950	3.100	30.657**
	Post-test	4.064	1.266		
Intra-natal Risk Factors	Pre-test	0.600	0.771	3.444	39.314**
	Post-test	4.044	1.200		
Post-natal Factors Causing High Risk	Pre-test	0.540	0.700	2.940	36.950**
	Post-test	3.480	1.050		
Pregnancy Complication	Pre-test	0.456	0.683	3.032	39.235**
	Post-test	3.488	1.042		
Immunization and Breast Feeding	Pre-test	1.368	1.162	2.416	21.601**
	Post-test	3.784	1.141		
Total	Pre-test	9.816	2.961	24.108	42.169**
	Post-test	33.924	8.513		

** Significant at 5% Level

Table 4: Findings related to association of knowledge with selected socio-demographic variables.

Specification	Knowledge		Chi - square	df	p - value
	Poor	Average			
Type of Family					
Nuclear	61(83.6%)	12(16.4%)	8.122	1	0.004**
Joint	116(65.5%)	61(34.5%)			
Number of Family Members					
4	39(86.7%)	6(13.3%)	9.457	4	0.044**
6	48(71.6%)	19(28.4%)			
8	57(62.0%)	35(38.0%)			

10	22(68.8%)	10(31.3%)			
Above 10	11(78.6%)	3(21.4%)			
<i>Duration of Married Life</i>					
Below 1 Year	41(77.4%)	12(22.6%)	8.284	3	0.046**
1-3 Years	105(65.2%)	56(34.8%)			
4-6 Years	25(83.3%)	5(16.7%)			
Above 6 Years	6(100%)	0(0.0%)			
<i>Type of Marriage</i>					
Consanguineous	74(77.9%)	21(22.1%)	3.731	1	0.053**
Non-consanguineous	103(66.5%)	52(33.5%)			
<i>Food Habits</i>					
Vegetarian	81(62.8%)	48(37.2%)	8.416	2	0.014**
Non-vegetarian	6(85.7%)	1(14.3%)			
Mixed	90(78.9%)	24(21.1%)			

have a thorough knowledge and awareness regarding maternal mortality and morbidity, they can incorporate this in to their practice while providing high quality care in cost effective way and make these health services accessible to under served population.

In the area of nursing practice, nurses should help the mothers and their family to acquire and identify the risk factors at the earliest to prevent maternal and foetal complication.

- Should involve mothers and their family and all women in reproductive age group in regular teaching programme.
- Should organize, conduct and evaluate the structured teaching programme on reduction as well as prevention of maternal mortality and morbidity.

Nursing Education

Today's nursing students are tomorrow's staff nurses, educators, administrators and, supervisors, nurse educators should prepare them not only to care the pregnant mothers but also to handle the complex and changing health needs of future mothers. In view to prevent the maternal mortality and morbidity, the nurse educators should motivate the student nurses to assess the learning needs of pregnant mothers on risk factors and its prevention and to organize the programmes in this direction.

Nursing administration

Structured teaching programme was an effective teaching strategy to enhance the knowledge in the positive direction among pregnant mothers. Therefore, the nurse administrators should plan, organize and implement such curriculum that

incorporates various teaching methods and other educational activities. They should take initiative and motivate the teachers, mothers and their family and general public in health education programmes and other health related activities. Nursing administrators have a responsibility to provide an opportunities for the staff development activities. This would enable the nurses to update their knowledge, acquire skills; develop favourable attitude and demonstrate quality care in management and prevention maternal mortality and morbidity. The nurse administrator should look after the special units and provide adequate support with money, material and man power for conducting teaching programmes and developing teaching material or self-instructional module regarding risk factors and alarming symptoms to prevent maternal and foetal complication.

Nursing Research

This topic has great relevance to the present day complexities of the health care delivery. It was found that very few Indian studies were being done to assess the knowledge and the effectiveness of structured teaching programme among pregnant mothers on high risk factors leads to maternal mortality and morbidity. Hence the findings of his study can motivate nurse researchers to conduct more studies related to structure teaching programme on high risk factors to reduce maternal mortality.

Recommendations

The following further studies are directed on the basis of the present study

- A similar study can be replicated on a sample with different demographic characteristics and with different techniques.

- A comparative study can be done on rural and urban community, literate and illiterate population.
- A survey can be done to determine the amount of interest and attitude among nurses, teachers, public in participating in the mortality and its prevention programme".
- An extensive teaching strategy protocol may be developed including all aspects of maternal health, risk factors and its prevention.
- A longitudinal study can be conducted to determine the long-term effectiveness of structured teaching programme.

Conclusion

This study assessed the knowledge of pregnant mothers and evaluated the effectiveness of structured teaching programme on high risk factors to reduce maternal mortality. The study showed that, the pregnant mothers had minimum knowledge on high risk factors. The analysis of the findings indicated that, structured teaching programme is an effective means to increase the knowledge of pregnant mothers on high risk factors to reduce maternal mortality as the computed 't' test was significant at 5% level of significance.

The results of the study will enable the health professionals to utilize the structured teaching programme to the pregnant mothers in the community settings as an additional intervention in prevention maternal mortality and morbidity by improving the knowledge, thus create health

seeking behaviour.

STP is one of the effective teaching methods in imparting the knowledge of pregnant mothers on high risk factors to reduce maternal mortality.

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