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A study to assess the effect of a planned teaching programme on the management of low birth weight babies among mothers in selected rural communities, Burdwan Health District, Burdwan

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Abstract :A quasi-experimental study was conducted to find out the effect of planned teaching programme on the management of low birth weight babies among mothers and evaluate the effectiveness of planned teaching programme on management of low birth weight babies among mothers in selected rural communities, Burdwan, West Bengal. Planned teaching programme can increase health awareness regarding management of low birth weight babies. The Conceptual framework adopted for the study was based on Stufflebeam's Context-input-process-product model. A non-equivalent pre testpost test control group design was adopted for this study. Forty mothers of low birth weight babies (0-6 months) for both experimental and control group by convenient sampling technique were taken. The tools were used structured interview schedule on knowledge regarding management of low birth weight babies (0-6 months) among mothers. Validity and reliability of the tools were established. The findings of the study revealed significant difference in pre test knowledge score and post test knowledge score of experimental group ['t' df (39) = 15.71 at P<0.05 level]. Significant difference also found in post test knowledge score of experimental group and control group ['t' df (78) = 17.42 at P<0.05 level]. Association between the pre test knowledge level and selected demographic variables prior exposure to planned teaching programme was done which revealed that there was significant association with education of mothers (chi-square = 5.248) whereas age, no. of child, type of family of mothers was not found to be significant. The finding of the study has implications in different field of nursing (Nursing practice, education, and administration and research). The similar study was recommended with large sample. Planned teaching programme was recommended at antenatal period. It can be concluded that planned teaching programme is effective to improve knowledge of mothers on management of low birth weight babies to promote normal and healthy growth and development and thereby reduce low birth weight mortality and morbidity.

Index Terms:- Assess, Knowledge, Effect, Planned teaching programme, Mothers of low birth weight babies, Low birth weight baby, Management of low birth weight babies, Demographic variables, Age, No of child, Type of family, Education

INTRODUCTION

A healthy population is the nation's prosperity. Healthy children today, make a healthy nation tomorrow. The neonatal period is very crucial to large extent determines the overall health status of the child and in turn adult life. Birth is a major challenge to the newborn to negotiate successfully from intrauterine to extra uterine life. The newborn baby is considered to be tiny and powerless, completely dependent on others for life. The healthy newborn is born at term, cries immediately after delivery and establishes satisfactory rhythmic pulmonary respiration. In India reports of various studies shows birth weights of mature newborn varying between 2.5 to 3.9 kgs with a mean of 2.7 kgs. The World Health Organization has defined the term "Low birth weight" as birth weight of 2499 grams or less. As per this definition, babies with a birth weight of 2499 grams are classified as "Low birth weight", irrespective of duration of the gestational age. Newborns with birth weight (for gestational age) of less than 10th percentile are categorized as "small for date" (SFD). Thus the term low birth weight includes preterm babies (those born before 37 weeks of gestation) as well as full-term babies who are small for date due to intrauterine growth retardation. Low birth weight neonates are further classified as very low birth weight (VLBW<1500grams) and extremely low birth weight (ELBW<1000 grams). Low birth weight infants have 2-3 times increased risk of mortality due to infection compared to normal

birth weight babies. These neonates are at high risk of asphyxia, sepsis, hypothermia and feeding problems etc. Maternal malnutrition and anaemia are the most important causes responsible for reduced birth weight in developing nations. Approximately four million global neonatal deaths that occur annually, 98% occur in developing countries, where most newborns die at home while they are cared by mothers, relatives, and traditional birth attendants. Despite proven cost-effective solutions to reduce neonatal mortality, such as promoting tetanus toxoid immunization, skilled birth attendance during delivery, immediate and exclusive breast feeding, and clean cord care, there has been relatively little change in neonatal mortality.

NEED OF THE STUDY. Birth weight is the single most important factor determining the survival chances of the newborn. Many of the newborn die during their first year of life. The infant mortality rate is higher for all low birth weight babies than other babies. Worldwide about eight newborn babies die every minute. Every year more than four million babies die during first week of life due to inadequate care by mothers/caregivers. In India over 30% of the infants are born as low birth weight. Nearly 75% of the neonatal deaths and 50% of infant death occur among low birth weight neonates. In India many communities keep mothers and babies indoor for the first month after birth. If the mother or baby become ill during the period of seclusion, seeking health care is often delayed, yet sick babies often die within a few hours or delays can be fatal. educating the mother is very useful in reducing the neonatal mortality. Mother has to regulate the child's behaviour, attitudes, outlook and home environment in family, since these are the basic factors that influence the growth of newborn. If the mothers are not acquainted with a recognition and referral of newborn danger signs, it might affect the rearing of their children. The care of newborn in the family is governed by the family's knowledge, awareness, and cultural practices. So the adequate knowledge of mothers on new born care is needed to control the mortality.

3.1Population and Sample

Population were mothers of low birth weight babies in selected rural communities, Burdwan, West Bengal.

In the present study samples were mothers of low birth weight babies (0-6 months) in selected rural communities, Burdwan, West Bengal.

For the final study a total of 80(40 experimental group + 40 control group) mothers of low birth weight babies (0-6 months) were selected as sample.

3.2 Data and Sources of Data

The final data collection was conducted at Mongolkote B.P.H.C, Mongolkote block (experimental group), Burdwan and Chittaranjan RH, Bhatar block (control group), Burdwan which was selected through simple random sampling and by lottery method.

Four area of each block were selected for collection of data. The areas were selected in such a way so that all GP (15) of the each block can cover. Child assessment camp were arranged by the help of B.M.O.H and other staff of those blocks so that all mothers of low birth weight babies of the particular area come on the particular day. After taking written consent from mothers of low birth weight babies, Pre test was taken on the particular day by structured interview schedule. After pre test planned teaching programme on management of low birth weight babies was conducted among the mothers of experimental group. On the eight day post test was taken. On that day child assessment camp also arranged to bring all those mothers of low birth weight babies who attend on first day.

3.3 Theoretical framework

The conceptual framework of this study was based on Stufflebeam's (1973) Context-input-process-product(CIPP) model.

Variables under study contains Independent dependent and demographic variable. The study used quasi –experimental approach and design was pre testpost test control group design.

RESEARCH METHODOLOGY

Methodology of research organizes all the components of the study in a way that is most likely to lead to valid answers to the problems that have been proposed. It contains statements of the problem, objectives of the study, method used for data collection and statistical method used for analyzing data. The details are as follows;

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Planned teaching programme on management of low birth weight babies was independent variable.

Dependent variable was knowledge of mothers of low birth weight babies on management of low birth weight babies.Demographic variables were age, no. of children, type of family, education of mother.

It was assumed that

1. Level of knowledge among mothers of low birth weight babies regarding management of low birth weight babies differ from one mother to another mother.
2. Planned teaching programme improve the level of knowledge among mothers of low birth weight babies regarding management of low birth weight babies.
3. Socio-demographic variable contribute to the level of knowledge among mothers of low birth weight regarding management of low birth weight babies.

There may be possibilities of

1. The mean post test knowledge score of mothers of low birth weight babies of experimental group who are exposed to the planned teaching programme on management of low birth weight babies(0-6months) among mothers is significantly higher than the mean pre test knowledge score as measured by structured knowledge questionnaire at 0.05 level of significance.
2. The mean post test knowledge score of mothers of low birth weight babies of experimental group who are exposed to the planned teaching programme on management of low birth weight babies (0-6months) is significantly higher than the mean post test knowledge score as measured by structured knowledge questionnaire of mothers of control group who are not exposed to the planned teaching programme at 0.05 level of significance.
3. There is significant association between pre test knowledge score of mothers of low birth weight babies on management of low birth weight babies and with selected demographic variables.

Delimitation of the study:-

1. The study is delimited to mothers who are not having low birth weight babies.
2. The study is delimited to mothers who are not agree to participate in study.
3. The study is delimited to mothers who are previously sensitized with the similar study.

3.4Statistical tools and econometric models

A structured interview schedule is developed to collect the information about socio demographic data. This section consists of socio-demographic variables such as age, no. of children, type of family and education of mother. This tool consists of four such questions to obtain demographic data through interview.

Structured knowledge questionnaire deals with the knowledge regarding management of low birth weight babies (0-6 months) among mothers, consisted of thirty multiple choice questions as per blue print and each right answer carries one mark. No negative mark.

After extensive review of mothers knowledge regarding management of low birth weight babies (0-6 months) programme manual prepared by other research and non research literature and discussion with experts, developed Planned Teaching Programme.

The content of interview schedule on knowledge regarding management of low birth weight babies was submitted to nine experts for validation on the basis of criteria checklist. Few modifications were made according to the suggestions of the experts.

The Bengali version of tools was prepared and language validity was established by re-translating it to English with the help of language experts.

Pre testing of the tool was done on 10 respondents at SNCU, R.G. Kar Medical College and Hospital, Kolkata. The purpose of pretesting was to identify needed modification and to establish the appropriateness of terminology. The mothers of low birth weight babies understand the most of the questions. The average time was taken by the subjects to complete

Reliability was computed using split half technique for establishing the internal consistency of the questions of structured interview schedule.The reliability-coefficient of the whole test estimated by Karl Pearson formula. The reliability of the tool was found that r = 0.90. So that was reliable for data collection.

Planned teaching programme on management of low birth weight babies was given to ten mothers of low birth weight babies to check its clarity and understanding. It was found that there was no such difficulty in understanding the content on management of low birth weight babies. The time taken by the mothers of low birth weight babies was about 40-45.

The final draft was prepared on knowledge of mothers on management of low birth weight babies incorporating all the suggestions given by experts. Bengali translation and reverse translation was done with the help of language experts.

The feasibility of the study was assessed by asking validated & reliable questionnaire on management of low birth weight babies through interview technique. The validated planned teaching programme was administered to the mothers of low birth weight babies of experimental group.

The post test on management of low birth weight babies was administered at eight day. The result showed that mean post test knowledge score (25.10) was higher than the mean pre test knowledge score (15).

The paired “t” test was done to assess the effectiveness of planned teaching programme. The “t” test value (8.44) was higher than the tabulated value (2.26). So it is established that there is a significant increase in the mean post test knowledge and the planned teaching programme is effective.

The chi square test was done to assess the association between pre test knowledge score and selected demographic variables. The chi square test result showed that there was no significant relation with selected demographic variables.

The research tool and the planned teaching programme were found to be feasible and practicable for the final study.

The final data collection was conducted at Mongolkote B.P.H.C, Mongolkote block (experimental group), Burdwan and Chittaranjan RH, Bhatar block (control group), Burdwan which was selected through simple random sampling and by lottery method.

Four area of each block were selected for collection of data. The areas were selected in such a way so that all GP (15) of the each block can cover. Child assessment camp were arranged by the help of B.M.O.H and other staff of those blocks so that all mothers

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According to the objectives and hypothesis of the study and opinion of the experts, it was planned to organize, tabulate, analyze and interpret the data by using both descriptive and inferential statistics. The plan for data analysis was as follows

- The data should be analyzed on the basis of objectives and hypothesis by using descriptive and inferential statistics.
- Coding of the data and organize the data in the master sheet and computer.
- Frequency and percentage distribution of the demographic characteristics of the mothers of low birth weight babies.
- Mean, Mean difference, standard deviation, 't' value to test the significant difference between mean pre test and post test knowledge score.
- Chi-square test to find out the association between the pre test knowledge score and selected demographic variables.

IV. RESULTS AND DISCUSSION

Table 1: Percentage of agreement among experts on validation of content on planned teaching programme on management of low birth weight babies (0-6 months) among mothers.

n = 09

SL. No.	Criteria	Agreement (%)	Need modification (%)	Remarks
1	**Formulation of Objectives :-** General objectives - comprehensive enough in terms of knowledge, comprehension, and application. -Realistic -Specific objectives stated in terms of learner outcome	88.89	11.11	Suggested Modification
2	**Content :** Adequate, level of Learners' understanding	100	-	
3	**Organization :** Logical sequence, continuity, Integrating	100	-	
4	**Visual aids :** Simple and understanding , Appropriate, relevant	100	-	
5	**Language :** Easy to understand, Grammatically sound, Terminology defined clearly	77.78	22.22	Suggested simple and understandable language
6	**Practicability :** Acceptable, economical	100	-	

Table 1 presented that, percentage of agreement in the area of content, organization, visual aids and practicability is 100%. There was 88.89% agreement in formation of objectives and 77.78% agreement in language. Some alteration was done according to suggestions of the experts. So the findings of the percentage of agreement suggested the validity of planned teaching programme.

Table 2 : Frequency and percentage distribution of mothers of low birth weight babies (0-6 months) by their age and type of family in experimental and control group.

n=80(40+40)

Sample Characteristics	Experimental group		Control group	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Age in years of Mothers				
Upto 20 yrs	22	55	17	42.5
Above 20 yrs	18	45	23	57.5
Type of family of Mothers				
Nuclear	13	32.5	12	30
Joint	27	67.5	28	70

Data presented in the table 2 show that majority number 22 out of 40(55%) of mothers of low birth weight babies in experimental group and 17 out of 40(42.5%) of mothers of low birth weight babies in control group belong to the age group upto 20 years. 18 out of 40(45%) of mothers of low birth weight babies of experimental group and 23 out of 40(57.5%) of control group belong to the age group above 20 years.

Data further depicted that majority 27 out of 40(67.5%) of mothers of low birth weight babies in experimental group and 28 out of 40(70%) of mothers of low birth weight babies in control group belongs to joint family and only 13 out of 40(32.5%) of mothers of low birth weight babies of experimental group and 12(30%) of mothers of low birth weight babies of control group belongs to nuclear family.

In pre-test maximum 19 out of 40(47.50%) of mothers of low birth weight babies in experimental group had knowledge between score range of 11-15 whereas 14 out of 40(35%) of mothers of low birth weight babies in control group had knowledge between score range of 11-15. Only 1 out of 40(2.5%) of mothers of low birth weight babies in control group had knowledge between score range 0 -5. 6 out of 40(15%) of mothers of low birth weight babies in experimental group had knowledge between score range of 6-10 and 13 out of 40(32.5%) of mothers of low birth weight babies in control group had knowledge between score range of 6-10. 13 out of 40(32.5%) of experimental group and 11 out of 40(27.5%) of control group had knowledge between score range of 16-20. Only 2 out of 40(5%) of experimental group and 1 out of 40(2.5%) of control group had knowledge between score range of 21-25. None of mothers of experimental and control group had knowledge between score range of 26-30.

Table 3: Area wise maximum possible score, mean, mean percentage distribution of pre test knowledge score on management of low birth weight babies among mothers of experimental group and control group. n = 80(40+40)

Knowledge Area	Maximum Possible Score	Experimental group Pre-test		Rank	Control group Pre-test		Rank
		Mean	Mean%		Mean	Mean%	
1.Meaning, causes and common problems	4	0.98	24.4	4	0.8	21	4
2.KMC (maintenance of warm chain and feeding)	16	8.7	54	2	7.5	47	2
3.Maintenance of Cleanli-ness (Clothing, cord & eye care)	5	3.3	65	1	3.1	62	1
4.Prevention of Infection (including Early signs & Sites of infection, immunization)	5	1.9	39	3	1.5	30	3

Data presented in table 3 reveals the ranking of pre test knowledge score of experimental and control group in terms of mean percentage in descending order. Mothers of both the experimental and control group had highest knowledge in the area of maintenance of cleanliness (Clothing, cord & eye care) with mean percentage 65 and 62 respectively, followed by KMC

(maintenance of warm chain and feeding) with mean percentage 54 and 47. Both the group had same ranking in the prevention of infection (including early signs & sites of infection) with mean percentage 39 for experimental group and 30 for control group. The experimental group had higher mean percentage (24.4) in the area of meaning, causes and common problems than control group (21).

Table :4 Range, mean, mean difference, median, standard deviation of pre test knowledge score on management of low birth weight babies among mothers of experimental group and control group.

n = 80(40+40)

Pretest Knowledge Score	Range of obtained score	Mean	Mean difference	Median	SD
Experimental	7-23	14.8	1.92	14	4.01
Control	5-22	12.88		13	4.10

Maximum possible score -30 Minimum possible score -0

Data presented in the table 4 show that the mean pre test knowledge score(14.8) of mothers of low birth weight babies of experimental group is higher than the mean pre test knowledge score(12.88) of mothers of low birth weight babies of control group with mean difference of 1.92. Range of pre test knowledge score of mothers of low birth weight babies of experimental group is 7-23 with a mean and median of 14.8 and 14, whereas range of pre test knowledge score of mothers of low birth weight babies of control group is 5-22 with a mean and median of 12.88 and 13. The standard deviation of pre test knowledge score of control group (4.10) was higher than the standard deviation of experimental group (4.01). It indicated that the pre test knowledge score of experimental group and control group was heterogenous.

Table 5 : Range of obtained score, mean, mean difference, S. D. and "t" value of the pre test and post test knowledge score of mothers of low birth weight babies (0-6 months) of experimental group.

n = 40

Knowledge score	Range of obtained score	Mean score	Mean difference	SD	"t" value
Pre test	7-23	14.80	11.05	4.01	15.71*
Post test	21-30	25.85		2.57	

Maximum possible score -30 Minimum possible score -0

df (39) = 2.02 p<0.05 *=Significant

Data presented in the table 5 indicates that the range of obtained score of experimental group in post test (21-30) was higher than the range of pre test knowledge score (7-23). Mean post test knowledge score (25.85) of mothers of experimental group was higher than the mean pre test knowledge score (14.80) with mean difference of 11.05, which was found to be statistically significant as evident from the 't' value of 15.71 for df (39) at 0.05 level of significance. Hence, it was evident that the obtained mean difference between pre test knowledge score and post test knowledge score of mothers of low birth weight babies was not by chance, it was a true difference. So, the null hypothesis was rejected and research hypothesis was accepted.

It could be concluded that the planned teaching programme on management of low birth weight babies was effective in increasing knowledge of mothers of low birth weight babies.

Table 6 : Association between pre test knowledge score with age, No. of child, type of family and education of mothers of low birth weight babies (0-6 months).

n = 80(40+40)

Variables	Knowledge level		Calculated χ^2 value
	<Median	≥Median	
Age in years of Mothers :			
<21 years			
	14	25	0.261
≥21 years	17	24	
No. of Child :			
One Child	13	29	2.265
More than one	18	20	
Type of Family :			
Nuclear	12	13	1.311
Joint	19	36	
Education of Mothers :			
< Class VI	27	29	5.248*
≥ Class VI	5	19	

Chi square = 3.84, df = 1, P<0.05 * = Significant

Data presented in table 6 show that there is significant association between pre test knowledge score of mothers of low birth weight babies with selected demographic variable such as education of mothers at df 1 and 0.05 level of significance but there is no significant association between pre test knowledge score of mothers of low birth weight babies with selected demographic variables such as age of mothers, No. of child and type of family at df 1 and 0.05 level of significance.

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