

Original Research Article

## **Effectiveness of Health Education Package on Knowledge and Practice Regarding Care of Low Birth Weight Babies (LBW) Among Post Natal Mothers**

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### **ABSTRACT**

**Background:** It was estimated that around 25 millions of low weight babies are born annually and they are exposed to number of problems like hypoglycemia, infection, hypothermia and respiratory problems etc. It is essential that the babies are taken care specially with utmost precaution. They need special nursing care. The present study was undertaken with an aim to determine the effectiveness of health education package on care of LBW baby among post natal mothers.

**Material and methods:** A quasi experimental study, pre and post test design without control group approach was undertaken among post natal mothers of Pravara Rural Hospital, Loni (Bk). A total of 50 post natal mothers were selected by simple random sampling technique, and self prepared and content validated structured questionnaire (for knowledge) and checklist (for practice) was used for data collection. The descriptive statistics (mean, SD and inferential statistics (chi square test) were applied wherever required.

**Results:** In pre test, the overall knowledge score was (21.2±4.52) which is 66% (average) whereas after implementation of health education package (post test) the score has improved i.e. (29.4±1.51) which is 91.81% (good) and found statistically significant ( $t=6.28$ ) at  $p<0.05$  level. Similarly the post test practice score had improved from 'partially adaptive' practice (15.78±3.34) to 'completely adaptive' practice (23.32±1.93) and found significant ( $t=6.28$ ) at  $p<0.05$  level. It was noted that practice on care of LBW babies had significant association with demographic variables like educational qualification ( $\chi^2=5.99$ ), type of family ( $\chi^2=4.56$ ) and parity of mother ( $\chi^2=8.06$ ) at  $p<0.05$  level.

**Conclusion:** The study outcome revealed that the health education package was found effective in improving the knowledge and practice on care of low birth weight baby of post natal mothers. It should be emphasized to have a health education packages on care of LBW babies in daily practice to enhance awareness and increase the competency of postnatal mothers.

**Keywords:** Effectiveness, Health education package, Knowledge, Practice, Low birth weight babies

### **INTRODUCTION**

The birth weight of an infant is the single most important determinant of its chances of survival, growth and development. The ideal birth weight for a newborn baby is 2500 kilograms and above. As per World Health Organization low birth weight baby (LBW) is one with a birth weight of less than 2500 grams the measurement being taken within the first

few hours of life, before significant postnatal weight loss has occurred. [1]

The new born health challenge faced by India is bigger than that experienced by any other country. Each year 20% of the world's infants (26 million) are born in our country. Currently for every minute three neonates are dying in India and every fourth baby born is low birth weight. The current neonatal mortality rate (NMR) is 43 per

1000 live birth accounts for nearly two – thirds of all infant mortality and half of under five child mortality. Over one third of all neonatal deaths occur on the first day of life, almost half within three days, and nearly three four of them in the first week. [2]

The reduction of low birth weight forms an important contribution to the Millennium Development Goal (MDG) for reducing child mortality. Activities towards the achievement of the MDGs will need to ensure a healthy start in life for children by making certain that women commence pregnancy healthy and well nourished, and go through pregnancy and child birth safely. Low birth weight is therefore an important indicator for monitoring progress towards these internationally agreed-upon goals. [3]

Maternal malnutrition and anemia are the most important causes responsible for reduced birth weight in developing nations. Other maternal factors playing a part include young age at conception, multiple pregnancies; pregnancy induced hypertension, infections, substance abuse etc. Genetic factors also play a role. [4]

The pre-maturely born baby did not have enough time to fully develop all his body organs like brain, Lungs, Heart, Kidneys and Liver etc. He is prone to several health problems due to lack of maturity of vital organs. [5]

WHO (2009) focused on the importance of caring for LBW infants, including feeding, kangaroo mother care, hygiene, cord & skin care, early detection and treatment of infections and complications which can remarkably reduce mortality of LBW infants. [6]

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 Davangere in the year 2009 there are 995 cases of low birth babies are admitted in NICU of Bapuji Child Health Institution among there are nearly 350 deaths are reported. [7]

LBW is a multifaceted problem with some known and few unknown reasons. The etiology of LBW is also complex with demographic, nutritional, reproductive, and socioeconomic factors each potentially playing a role. These causes can be enlisted as maternal Hemoglobin (Hb) level, hard manual work during antenatal period, maternal nutrition, economic condition, antenatal care, parent's education, tobacco use, maternal age, and parity. [8]

It is important to recognize that nursery personnel need to be trained to accept what a mother feels, and praise what a mother is doing right. Give practical help, relevant information and suggestions regarding lactation supporting lactation in mothers of Very Low- Birth weight (VLBW) infant are achievable with appropriate knowledge, attitude and skill. [9]

Along with the training of health care professionals including nurses, TBA's and anganwadi workers, it has also been universally accepted that improved survival rate of low birth weight babies can be successfully achieved by training and educating the mother's and family members on home based care. The programs of Government of India (GOI) namely Child Survival and Safe Motherhood (CSSM) and Reproductive Child Health program (RCH) emphasizes the need of involving mother and family members in essential new born care which focus on feeding, maintaining of proper warmth, recognizing danger signs in the new born, immunization, spacing, follow up and screening. [10]

A number of scientific studies and systematic reviews showed a significant improvement in awareness and skill in care of LBW babies. Alongside it was recommended that the education and training must be integral part of nursing care, thereby reduces the occurrence of associated illness and mortality of LBW babies. Thus the present study was undertaken with an aim to assess the awareness, and determine the effectiveness of health education package on care of LBW baby among post natal mothers.

## MATERIALS AND METHODS

A quasi experimental study, pre and post test design without control group approach was undertaken among the post natal mothers admitted at Pravara Rural Hospital, Loni (Bk), Dist. Ahmednagar, Maharashtra. A total 50 post natal mothers were selected by simple random sampling technique who met the inclusion criteria's. The post natal mothers had pregnancy associated diseases such as DM, eclampsia and PIH; and had LSCS delivery was excluded from the study. The self prepared and content validated structured questionnaire (for knowledge) and checklist (for practice) was used to gather data related to the study variables. It includes three sections such as 1. Section A – socio demographic data of the post natal mothers (6 items) and clinical characteristics (5 items); 2. Section B – dichotomous questionnaire for knowledge assessment (32 items – including the sub sections like a) introduction on LBW baby (3 items) b) management of LBW baby (9 items) c) thermoregulation (4 items) d) feeding (5 items) e) skin care (4 items) f) eye care (3 items) g) infection control (5 items) and h) complication (2 items). The correct response carries the score of one and wrong response carries zero score; and 3. Section C – checklist for practice assessment (26 items). The each correct step carries a score of one and the incorrect/wrong step carries a score of zero. Based on scores knowledge was categorized as poor, average and good; similarly the practice was categorized in to not adaptive, partially adoptive and completely adoptive practice.

The reliability testing echoed that the tool was found reliable (questionnaire  $r=0.72$  and checklist  $r=0.96$ ). The pre testing was conducted before implementation of Health Education Package on care of LBW baby by using the structured questionnaire followed by investigator implemented the health education package regarding care of LBW baby. It was carried out with help of lecture cum discussion (45 – 60 minutes for two days) along with supplementation of

educative materials such as leaflet, pamphlets in local language. Post test was carried out (on the day of discharge) with help of same structured questionnaire. The collected data were compiled, tabulated and analyzed based on objectives/hypotheses with help of descriptive (mean, SD and mean %) and inferential (chi square test) statistical methods.

## RESULTS

**Socio demographic profile of post natal mothers:** Higher percentage (46%) were in the age group of 19 – 22 years, and similar percent (36%) and (34%) had secondary school education as well as primary education respectively. More than half (52%) of them were home makers and significant percent (18%) were farmers, majority (74%) were belongs to joint family wherein (26%) were nuclear family. Half (50%) of them were Hindus, and (38%) had monthly income of Rs. 3001 – 6000 followed by (28%) had income of Rs. 6001 – 9000. A significant percent (36%) of them had information on care of LBW babies through health care professionals whereas (30%) got information via mass medias like television and radio etc.

**Clinical characteristics of post natal mothers:** More than half (54%) of post natal mothers were primi gravid and the remaining (46%) were multi para mothers. Majority (74%) of them had gestational age between 37 – 40 weeks, while significant percent (26%) had less than 37 weeks. Majority (60%) of them had height of 141 – 145 cm, wherein (22%) had height <140 cm. Half (52%) of mothers had weight less than 50 kg and remaining (42%) had weight between 51 – 60 kg while a significant proportion (52%) of mothers had anemia.

**Socio demographic profile of low birth weight baby:** Majority (62%) of LBW babies was 'baby girl' and remaining (38%) were 'baby boy'. Two third (66%) of babies had birth weight between 2001 – 2500 gm whereas a significant percent (34%) had weight less than 2000 gm. Half (52%) of the baby's had asphyxia, and (32%) had co

morbid illness like jaundice and nephritic syndrome etc.

**Effectiveness of health education package on knowledge on care of LBW baby:** It was noted from the depicted Table No. I that the post test mean score was (29.4±1.5) which is 92% higher than pre test score (21.2±4.5) which is 66%, wherein the effectiveness was 26% (range 02% to 32%) and found statistically significant (t=6.24) at p<0.05 level. It highlights that the health education package was effective in enhancing the knowledge on various aspects of related to care of LBW among postnatal mothers.

**Effectiveness of health education package on practice on care of LBW baby:** It was noted from the depicted Table No. II that the post test mean score was (23.3±1.9) which is 90% higher than pre test score

(15.7±3.3) which is 61%, wherein the effectiveness was 29% (range 18% to 41%) and found statistically significant (t=6.28) at p<0.05 level. It echoed that the health education package was effective in improving the competence on various aspects of care of LBW among postnatal mothers.

There was a significant association found between the practice score with socio demographic variables such as education ( $\chi^2=5.99$ ), type of family ( $\chi^2=4.56$ ) and parity ( $\chi^2=8.06$ ) at p< 0.05 level. Similarly, a coefficient of correlation value depicted a positive relationship between knowledge and practice scores on care of LBW baby (r=0.8). However there was no statistical association found between knowledge score and socio demographic variables.

**Table No. I: Effect of health education package on knowledge regarding care of LBW baby** N=50

SN	Area	Max score	Pre test			Post test			't' value
			Mean	SD	Mean%	Mean	SD	Mean%	
1	Introduction to LBW	3	2.8	1.82	93	2.8	0.28	95	5.14*
2	Management of LBW	6	4.2	0.94	71	5.4	0.78	91	5.60*
3	Thermoregulation	4	2.3	1.08	57	3.4	0.69	85	5.80*
4	Feeding	5	3.4	0.98	68	4.8	0.44	96	5.73*
5	Skin Care	4	2.4	0.67	61	3.6	0.54	91	6.01*
6	Eye Care	3	1.9	0.72	64	2.6	0.62	89	4.92*
7	Infection control	5	3.7	1.03	74	4.7	0.51	95	5.14*
8	Complication	2	1.1	0.60	55	1.7	0.41	87	4.94*
	Over all	32	21.2	4.52	66	29.4	1.51	92	6.24*

Df – 29 \* Significant

P<0.05 level

**Table No. II: Effect of health education package on practice about care of LBW baby** N=50

SN	Area	Max score	Pre test			Post test			't' value
			Mean	SD	Mean%	Mean	SD	Mean%	
1	Care of fever	4	3.0	0.70	77	3.9	0.73	98	5.41*
2	Nutrition care	5	3.5	0.67	71	4.4	0.57	89	4.85*
3	Skin care	4	2.5	0.75	64	3.4	0.64	86	5.77*
4	Cord care	4	2.1	1.03	54	3.8	0.4	95	5.89*
5	Eye care	3	1.2	0.69	41	2.3	0.70	78	1.44
6	Infection control	6	3.1	1.24	53	5.32	0.76	89	6.29*
	Over all	26	15.78	3.34	61	23.32	1.93	90	6.28*

Df – 29 \* Significant

P<0.05 level

## DISCUSSION

Half (52%) of post natal mothers had weight less than 50kg while the remaining, (42%) mothers had weight between 51-60 kg and only (6% ) had weight above 61-kg. This finding were contradictory with the findings of Jaya Suryawanshi and Kaveri were from (69%) ≥45 kg whereas (61%) had <45 kg weight of the post natal mothers. [11]

Majority (74%) of post natal mothers had gestational age 37-40Weeks and (26%) had gestational age less than 37 weeks. These findings were correlated with the Meresa Gebremedhin, Fentie Ambaw, Eleni Admassu and Haileselassie Berhane were from the babies born at gestational age of 37 weeks and more (69.43). [12]

Half (52%) of post natal mothers had anemia and (42%) had other co morbid



illness. These findings were correlated with WHO criteria findings that 51.13% of mothers are anemic. 5.03% mothers had the history pregnancy induced hypertension and 24.75% mothers had one of the obstetric complications during their pregnancy. [13]

More than half (66%) of low birth weight baby between 2001 – 2500 gm and significant percent 34% of the baby's had birth weight less than 2000 gm, This findings were contradictory with the findings of Pravati Tripathy that higher percent 42% were between 1500 – 2000 gm and only 26% were 2000 – 2500 gm. [14]

There was a statistically significant difference was found after the implementation of health education package to post natal mothers. It highlights that the nursing intervention was effective in enhancing the awareness and practice of care of LBW babies. These facts were consistent with study by Sheoran P, Babu M, Mandal K and Rai K that the nurse led education enables the knowledge and skill on care of LBW babies among the maternal mothers. [15]

The study findings show that recognition of LBW by mothers is difficult especially when the baby is not weighed. Knowledge regarding causes and care of LBW babies was high among mothers who delivered in the hospital compared to those who delivered in lower level health facilities or at home. There are beliefs especially associated with causes of LBW, keeping the baby warm and feeding which affect the home care practices either positively and negatively. Home care practices were good in some aspects like cord care but poor regarding hand washing with soap. Mothers who delivered in the hospital had good home care practices in spite of some challenges.

A significant association was found between practice on care of LBW babies with socio demographic variables such as education, type of family and parity; similarly a positive correlation was noted between the knowledge and practice on care of LBW babies. It endorses that the level of

awareness influences the practice of post natal mothers on practice on care of LBW baby.

## CONCLUSION

Low birth weight is one of the most significant contributing factors for neonatal morbidity and mortality. The reduction of low birth weight and care of LBW babies forms significant contribution in the millennium development goal. The parental education and training is paramount important for mothers to overcome the health issues related to LBW babies, and it's a need of the hour. The study result highlights that health education package was effective in improving knowledge as well the practice on care of LBW babies, and found statistically significance. It was evident that there was a significant positive relationship was existed between knowledge and practice regarding care of LBW babies.

Hence, it should be emphasized that having educational sessions along with educative material like pamphlet, leaflet, poster would thereby improve the knowledge and develop competencies on care of low birth weight baby. Thus it significantly contributes in reducing the mortality and morbidity rate, minimize the impact of complication. It contributes in achieving the notion on health baby wealthy nation.

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