

EFFECTIVENESS OF HOME BASED CARE INTERVENTION ON KNOWLEDGE AND SKILLS REGARDING CARE OF LOW BIRTH WEIGHT BABIES AMONG MOTHERS IN SELECTED AREA, SRIKAKULAM, A.P

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DOI: <http://doi.org/10.47211/idcij.2021.v08i04.008>

ABSTRACT:

Worldwide, Low birth weight babies are a significant public health problem and are associated with a range of both short and long-term consequences. Further, worldwide, it is estimated that 15% to 20% of all births are low birth weight, representing more than 20 million births a year. Low birth weight (LBW) has been defined by the World Health Organization as weight at birth of less than 2.5 kg. The global prevalence of LBW is 15.5%, which amounts to about 20 million LBW infants born each year, 96.5% of them in developing countries. Hence, as an investigator felt the need of an effectiveness of Home based care Intervention on knowledge and skills regarding care of Low Birth Weight Babies among Mothers in Srikakulam Dist, A.P

Methodology: Quantitative research approach and true experimental research design of pre and post test was used for the present study. Purposive sampling technique was used to recruit the samples and assigned as experimental and control group. The researcher developed a home based care intervention on care of Low birth weight babies among mothers to evaluate its effectiveness. The data was collected through the structured closed ended questionnaire i.e. knowledge questionnaire on home care of low birth weight babies (KQHLBW), and Caregivers skill scale on home care of Low birth weight babies (CSSHLBW). **Findings:** The mean values of knowledge and skill have increased in experimental group than that of control group after implementation of home based care intervention on care of Low birth weight babies. In the experimental group, highly significant difference was found in ANOVA for repeated measures shows that there was significant increase from the mean pretest to consequent post-tests (post-test one, post-test two and post-test three) knowledge scores ($F = 386.44$, $p < 0.01$), and skill scores ($F = 330.73$, $p < 0.01$). Bonferroni test findings showed that there was significant difference ($p < 0.01$). This indicates significant improvement in knowledge and skill score among the experimental group. Therefore, it can be concluded that home based care intervention on care of Low birth weight babies was effective. **Interpretation and Conclusion:** The findings of the study reveal that there was highly significant increase in the knowledge and skill of Mothers on home care of Low birth weight babies. Hence, it is concluded that home based care intervention on care of Low birth weight babies is highly effective in improving the knowledge and skill of Mothers on home care of Low birth weight babies.

KEYWORDS: Low birth weight, Home based care intervention, Knowledge, Skill.

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INTRODUCTION:

Low-birth-weight babies have a high risk of neonatal and infant morbidity and hence the proportion of babies with low-birth-weight is considered as a sensitive index of nation's health and development (WHO, 1980; Ebrahim, 1982; Idris et al., 2000). It becomes an indicator of community health and its periodic monitoring helps to estimate the impact of them on preventive health services in the country. Worldwide, the indicator is noted as a good summary of a multifaceted public health problem of long-term maternal malnutrition, ill health, hard work and poor pregnancy healthcare. The significance and interpretation of low-birth-weight has recently come into prominence, because it indicates the chances of survival, growth, and long-term health, and of impaired cognitive development. **(Blanc and Wardlaw, 2005)**

There is considerable variation in the prevalence of low birth weight across regions and within countries; however, the great majority of low birth weight births occur in low- and middle-income countries and especially in the most vulnerable populations. Regional estimates of LBW include 28% in south Asia, 13% in sub-Saharan Africa and 9% in Latin America. **(UNICEF 2014)**

Based on data from the Sample Registration System (SRS) estimates that 14.3 percent of all Infant Mortality Rates (IMR) is caused by low birth weight (2015) and 55 percent of all neonatal deaths. Three causes of deaths are prematurity or low birth weight, neonatal infections, and birth asphyxia or trauma accounted for more than three-quarters of neonatal deaths in India. To meet the 2030 Sustainable Development Goals for child mortality, India will need to maintain the current trajectory of 1–59-month mortality and accelerate declines in neonatal mortality (to >5% annually) from 2015 onwards. There is evidence to show that promotion of breastfeeding practices, ANC care and child immunization have positive relationship in terms of reduced IMR.

(Sample Registration System, 2015)

Andhra Pradesh, estimated that, out of the total deaths reported, 8.8% are infant deaths (<1 year), 0.4 % are deaths of (1 - 4 years) children, 9.2% are deaths of children of (0 - 4 years) and 1.0% deaths pertained to children of (5 -14 years). In overview it is observed that the estimated deaths of the state are below the mark of all India. The percentage of infant deaths to total deaths varies substantially across the states. It varies from moderate level of 2.6% in Kerala, 4.1% in Tamil Nadu to as high as 20.2% in Bihar against 11.9% in India. The percentage of infant deaths to total deaths for Andhra Pradesh is 8.8% where as it is 8.9% in Rural areas and 8.5% in Urban areas against the national level of 11.9% with 13.3% in Rural areas and 8.1% in Urban areas. According to SRS in 2015, percentage of deaths in the age group of (0-4 years) for Andhra Pradesh and India are 9.2% and 13.4 respectively against 9.1% and 15.0 % in rural areas, 9.2% and 8.9% in urban areas for State and India. Neonatal Mortality: Neo- natal deaths refers to the deaths of infants less than 29 days of age.

(Sample Registration System, 2015)

Low birth weight may contribute to 60% to 80% of all neonatal deaths. Low birthweight infants are at high-risk of early growth retardation, infection, developmental delay and death during infancy and childhood. **(Child guidelines, U.S, 2014)**

Caregiver role is vital in caring low birth weight babies. Most of the mothers lack knowledge on home care and have poor skills upon this disorder. If the mothers do not have knowledge and support, they might not be able to take up skill in the responsibilities of taking care of the low birth weight babies. Increasing knowledge and shaping the mothers' skills may help mothers burden and reduces complications and death rate of babies. **(Bernadette Daelmans, 2018)**

OBJECTIVES

1. To determine the pre-test level of knowledge and skills of mothers regarding care of low birth weight babies.
2. To develop and implement home based care intervention on knowledge of mothers regarding care of low birth weight babies.
3. To evaluate the effectiveness of home based care intervention in the terms of gain in level of knowledge score and skills score.
4. Find the association between demographic variables and pre-test level of knowledge and skills among mothers regarding care of low birth weight babies.

HYPOTHESIS

H1: The mean post-test knowledge score of mothers regarding care of low birth weight babies in the experimental group will be significantly higher than that of the control group as measured through structured knowledge questionnaire.

H2: The mean post-test skills score of mothers regarding care of low birth weight babies. In the experimental group will be significantly higher than that of the control group as measured by Likert scale.

H3: There will be a significant association between pre-test knowledge scores of Mothers on their age, type of family, education, religion, family income, parity, source of knowledge and any previous information

regarding low birth weight.

H4: There will be a significant association between pre-test Skills scores of Mothers on their age, type of family, education, religion, family income, parity, source of knowledge and any previous information regarding low birth weight.

H5: There will be a significant correlation between knowledge and skills scores of pre and post test of mothers regarding care of low birth weight babies.

MATERIALS AND METHODOLOGY:

An Evaluative study was conducted to find out the effectiveness of Home based care intervention of Low birth weight babies among mothers in terms of improvement in knowledge and skill of mothers. A true experimental pre and post –test control group design was used. Purposive sampling technique was used to select the samples. The study was conducted at different home care settings at selected community. Following consent process the mothers were randomized into either the experimental or the control group by purposive sampling technique. Sample consisted of 60 each in the experimental and control group.

DESCRIPTION OF THE TOOLS:

The researcher developed a home based care intervention on care of Low birth weight babies. The tools have been developed by the authors on the basis of the objectives of the study and the tools been validated by the experts and computed for reliability. The data was collected through tools such as socio-demographic pro-forma, knowledge questionnaire on home care of Low birth weight babies (KQHLBW) ($r=0.92$), and mothers skill scale on home care of Low birth weight babies (CSSHLBW) ($r=0.85$). Before implementation, pilot study was done to obtain the feasibility, accuracy as well as it was found that the tools are reliable.

DESCRIPTION OF THE INTERVENTION:

The home based care intervention on care of Low birth weight babies was developed for mothers of Low birth weight babies based on the objectives, review of literature and the opinion of experts. The sequential steps involved in the development of STP are depicted as schematic representation as given in below.

The home care intervention of low birth weight babies aspects explained is under following headings:

- Introduction
- Feeding & different types of feeding
- Kangaroo Mother care
- Skin care
- Home based care of low birth weight baby
- Prevention of complications

FINDINGS OF THE STUDY:

Description of demographic data:

Highest percentage of mothers was belongs to age group between 20-25 years in experimental (45%) and control (41.67%) group. The highest percentage of mothers were belongs to Hindu religion in experimental (61.67%) and control (53.33%) group. The highest percentage of mothers were belongs to nuclear family in experimental (63.33%) and control (70%) group. the highest percentage of mothers had no formal education in experimental (43.33%) and control (40%) group. The highest percentage of mothers was home maker in experimental (68.33%) and control (56.67%) group. The highest percentage of mothers had family income of Rs 5000-10000 in experimental (36.67%) and control (43.33%) group. The highest percentage of mothers was primi in experimental (51.67%) and control (48.33%) group. The highest percentage of mothers were belongs to rural area in experimental (61.67%) and urban area in control (53.33%) group. The highest percentage of mothers had information from mass media in experimental (40%) and control (35%) group. The highest percentage of mothers had a baby with birth weight of below kg in experimental (61.67%) and control (56.67%) group. The highest percentage of baby weight at discharge was between 2.1 to 2.5 kg in experimental (50%) and control (55%) group.

Level of Knowledge	Experimental Group								Control Group							
	K1		K2		K3		K4		K1		K2		K3		K4	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Very Poor	60	100	28	46.7	19	31.7	6	10.0	60	100	55	91.7	43	71.7	38	63.3
Poor	0	0	12	20.0	8	13.3	5	8.3	0	0	5	8.3	9	15.0	6	10.0
Average	0	0	20	33.3	25	41.7	14	23.3	0	0	0	0	8	13.3	16	26.7
Good	0	0	0	0	8	13.3	21	35.0	0	0	0	0	0	0	0	0
Excellent	0	0	0	0	0	0	14	23.3	0	0	0	0	0	0	0	0

Table 1: comparison of experimental and control overall Mean, SD, Mean % scores of knowledge scores of pre (K1), post-test one (K2), post-test two (K3) and post-test three (K4) among mothers on home care of low birth weight babies

All the mothers (100%) in the experimental group and (100%) in the control group had very poor knowledge in pre-test. In the experimental group knowledge scores had consequently improved after the implementation of home-based intervention regarding care of low-birth-weight babies, i.e., Good knowledge is 13.3% in post-test two (K3), 35% in post-test three (K4). However, excellent knowledge is 22.3% in post-test three (K4). Further, slight improvement in knowledge scores was found in the control group. It was observed that in post-test three (K4) 63.3% had very poor knowledge, 10 % poor knowledge, only 26.7 % had Average knowledge.

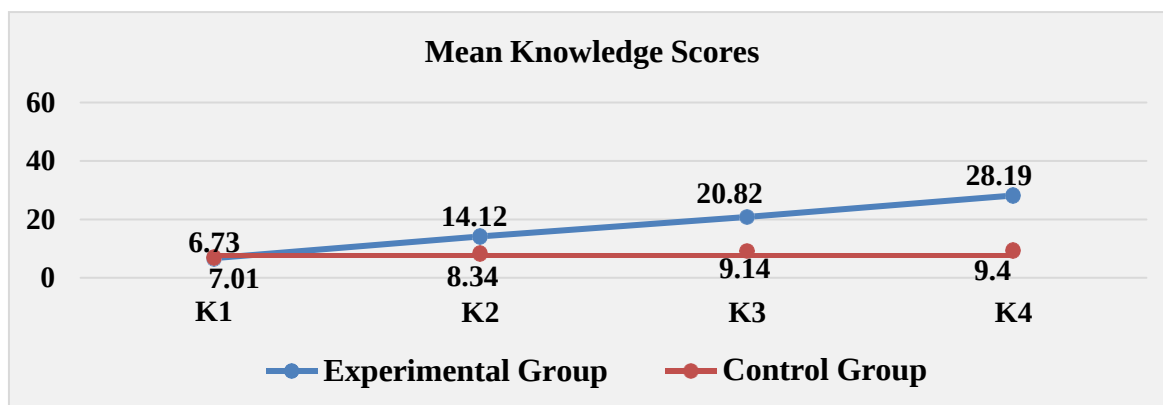


Figure 2: Line graph showing the mean knowledge scores of pre- and consequent post-tests of experimental and control group.

Normality test Knowledge

Groups	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	P value	Statistic	df	P value
Experimental	0.127	60	0.403	0.965	60	0.613
Control	0.145	60	0.216	0.953	60	0.342

Table 2: Normality test knowledge among mothers on home care of low birth weight babies

To check for normal distribution of the data, Kolmogorov-Smirnov test was applied to the pre-test data in experimental and control group. The result showed that the test distribution was normal $p > 0.05$ in both experimental & control group. Hence it was inferred that the sample came from normal distribution. It indicates that all the observations in experimental and control group follow normal distribution.

Level of Skill	Experimental Group								Control Group							
	S1		S2		S3		S4		S1		S2		S3		S4	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Very Poor	60	100	22	36.6	12	20	3	5	60	100	52	86.7	48	80.0	41	68.3
Poor	0	0	26	43.3	16	26.7	7	11.6	0	0	6	10.0	7	11.7	10	16.7
Average	0	0	16	26.7	28	46.6	18	30	0	0	2	3.3	5	8.3	9	15.0
Good	0	0	0	0	16	26.7	23	38.3	0	0	0	0	0	0	0	0
Excellent	0	0	0	0	0	0	9	15	0	0	0	0	0	0	0	0

Table 3: Level of skills among mothers on home care of low birth weight babies

Table shows that all the mothers (100%) in the experimental group and (100%) in the control group had very poor skill in pre-test. In the experimental group skill scores had consequently improved after the implementation of home-based intervention regarding care of low-birth-weight babies, i.e., Good Skill is 16% in post-test two (S3), 38.3% in post-test three (S4). However, excellent Skill is 15% in post-test three (S4). Further, slight improvement in knowledge scores was found in the control group. It was observed that in post-test three (S4) 63.3% had very poor Skill, 10.7% poor Skill, only 15% had Average Skill.

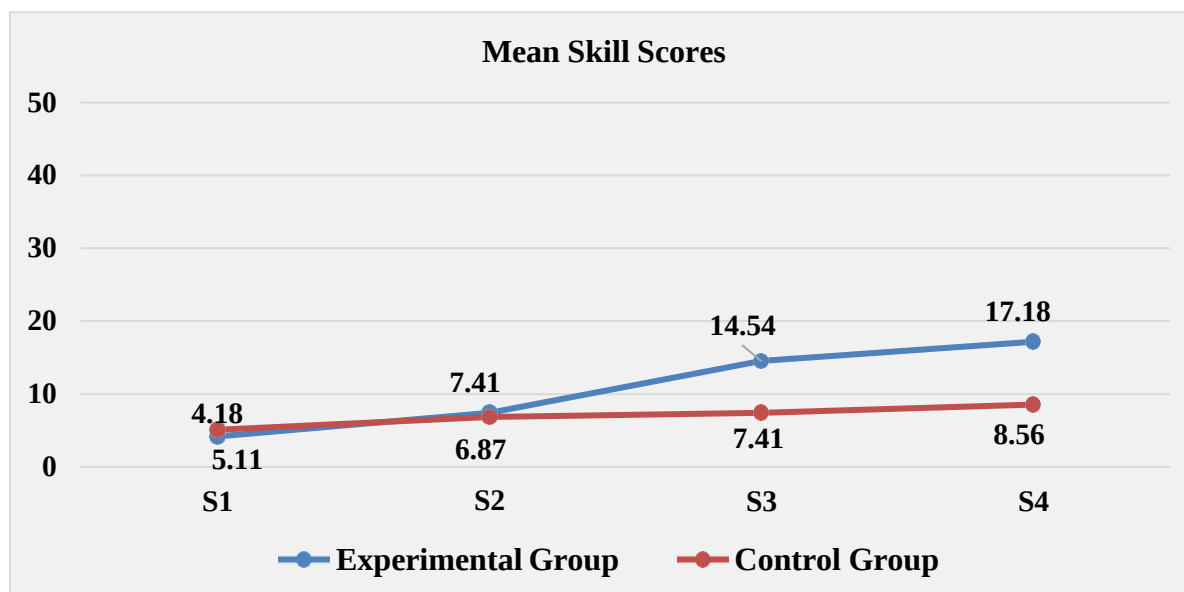


Figure 3: Line graph showing the mean Skill scores of experimental and control group.

Table 4: Level of knowledge & skills among mothers on home care of low birth weight babies

Variables	Experimental Group		
	Observation	r Value	P value
Knowledge -Skill	Pre-test	0.728	0.023 ^s
	Post-test I	0.618	0.034 ^s
	Post-test II	0.712	0.029 ^s
	Post-test III	0.798	0.018 ^s

The data presented in table shows the relationship between knowledge and skill. The computed findings of Pearson correlation coefficient value show there is positive correlation between knowledge and skill in pre-test, post-test one, post-two and post-test three with r value of 0.728, 0.618, 0.712, 0.98 respectively which were significant at level of $p = 0.023, 0.034, 0.029, 0.018$ respectively. Hence, it was found that if knowledge increases skill also increases in the same direction of knowledge. Hence the researcher has rejected the null hypothesis (H_0) and accepted the research hypothesis (H).

The Bonferroni test shows that there was significant difference ($p < 0.01$) in the experimental group than the control group. The computed statistical findings indicate that in experimental group there was significant improvement in knowledge, attitude and skill scores on home care of schizophrenic patients among primary caregivers. Therefore, it can be concluded that STP was effective.

CONCLUSION

The present study findings indicated that home based care intervention on care of Low birth weight babies had a positive effect on Mothers and hence it could be implemented in any set up like home or community area to change in the knowledge, attitude and skill. The findings of the study reveal that there was highly significant increase in the knowledge and skill among Mothers of Low birth weight babies. Hence, it is concluded that home based care intervention on care of Low birth weight babies is highly effective.

DISCUSSION

There was significant association between pre-test level of knowledge and demographic variables such as type of family, do you have knowledge about care of low birth weight baby at home. The highest percentage of mothers had a baby with birth weight of below 1.5 kg in experimental (61.67%) and control (56.67%) group. The highest percentage of baby weight at discharge was between 2.1 to 2.5 kg in experimental (50%) and control (55%) group. There was significant association between pre-test level of knowledge and demographic variables such as family income per month, age, place of living, education about care of low birth weight baby at home. The experimental group knowledge scores had consequently improved after the implementation of home-based intervention regarding care of low-birth-weight babies, i.e., Good knowledge is 13.3% in post-test two (K3), 35% in post-test three (K4). However, excellent knowledge is 22.3% in post-test three (K4). ANOVA and MANOVA test was used to analyze the effectiveness of the care of low birth weight babies at home among mothers. It was found that ANOVA and MANOVA value was statistically significant at 0.05% level. This shows

that the home based nursing care of the low birth weight babies was effective. The results of co-efficient correlation analysis revealed that there was a positive relationship between knowledge scores and demographic variables among mothers. So, this study concluded that study was effective in care of low birth weight babies among mothers. Thus, from the findings it is clear that the home based nursing care of the low birth weight babies could be beneficial in increasing knowledge and skill of the Mothers as well as decreasing burden related to care of low birth weight babies.

IMPLICATIONS

The findings of the study have implication for nursing practice, nursing education and research.

NURSING EDUCATION

- Conduct Workshop/seminar for community health nurses should be conducted regarding care of low birth weight babies at home among mothers. It helps nurse to improve their knowledge on care of low birth weight babies. When they go to duty in community, they can assess the level of knowledge of mothers and they manage the low birth weight babies in community itself.
- Nursing students with a master degree should conduct the educational programme regarding care of low birth weight babies at home in community health services.
- The Nursing curriculum of community Health Nursing should be concentrated more in imparting on home based care intervention on care of Low birth weight babies among mothers.

NURSING PRACTICE

- As a part of health care professional often encourage Nurses to practice home based care intervention on care of Low birth weight babies among care of low mother at home.
- The health care professionals should conduct the training programme on care of low birth weight babies at home among mothers in home setting.
- The nurse who has a degree in community health nursing act like a community trainer.

NURSING ADMINISTRATION

- A Nurse Administrator should take the leading role to conduct the workshops for the care of low birth weight babies at home in community health services.

NURSING RESEARCH

- Only limited research is available in the scope of nursing regarding this STP on care of low birth weight babies at home among mothers. So, it is required to conduct the extensive research in this topic in nursing such as finding the effectiveness in role of mothers in prevention of complications of low birth weight babies in community.
- A longitudinal study is needed to measure the effect of STP overtime. A study can be conducted by using different techniques for mothers. The STP developed by the researcher for this study can be used with or without modifications in different settings. Needs of the patients can be assessed and the particular aspects can be focused more and retested.

LIMITATION

1. The researcher felt it difficult to seek permission from the district level administration.
2. The researcher faced difficulty in convincing the data and conducting Three times posttest.
3. The researcher was found some difficulties rose while collecting data from the mothers.
4. This study was focused only on Srikakulam district as per the researcher's convenient. It would be conducted at the state level in order to improve practice.

RECOMMENDATION

On the basis of this present study, the following recommendations are to be considered.

- A longitudinal study can be conducted to assess the effectiveness care of low birth weight babies at home
- A descriptive study can be conducted among nurses to assess the level of knowledge on care of low birth weight babies at home.
- The hospital, school and college of nursing management would take the initiative to conduct the continuous education programme for teachers regarding the low birth weight baby care at home.

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