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Effectiveness of Planned Teaching on Knowledge of Selected Risk Factors Related to Low Birth Weight Babies among Antenatal Mothers at Vidarbha Region

Archana Maurya[1], Sr Josy CMC[2]

[1]Professor, Department of Child Health Nursing, SRMMCON Sawangi Meghe Wardha (M.S.), India

[2]Professor, SRMMCON Sawangi Meghe Wardha (M.S.), India

Abstract: ***A interventional study was conducted to assess the effectiveness of planned teaching on knowledge of selected risk factors related to low birth weight babies among antenatal mothers in selected hospital at Vidarbha region. Objectives: 1 To assess the knowledge regarding selected risk factors related to low birth weight babies among antenatal mothers. 2. To evaluate the effectiveness of planned teaching on knowledge regarding selected risk factors related to low birth weight babies. 3. To associate the knowledge regarding selected risk factors related to low birth weight babies among antenatal mothers with selected demographic variables. Methodology: The subjects consisted of 100 antenatal mothers. Findings :The finding show that in pre test score, 47% of sample were having average knowledge, 49% of samples having good knowledge score and 4% samples having 4% very good knowledge whereas in post test scores only 4% of samples were having good knowledge ,73% of samples having very good knowledge and 23% samples having excellent knowledge. Conclusion- Planned Teaching on Knowledge of Selected Risk Factors Related to Low Birth Weight Babies among Antenatal Mothers were effective.***

Keyword: Effectiveness, Planned teaching, Risk factors, Low birth weight babies, Antenatal mothers.

1. Introduction

Learning is the addition of new knowledge and experience. Interpreted in the light of past knowledge and experience. Teaching and learning is an integral part of nursing. Nurses have the responsibility to educate patients related to various aspects and keep themselves updated. Various teaching strategies are used to increase knowledge, such as lecturing, Demonstration, discussion and self-education. These methods of self-education has an advantage over the others as the learner can educate himself at his own pace and it also stresses on rereading [1]

Motherhood is a beautiful and joyous experience to a woman. The health of the mother during pregnancy is important to give birth to a healthy baby. Birth weight is a critical determinant for survival in the neonatal period and for future growth and development of the newborn. The newborn with the low -birth weight starts life with a handicap and this way persists in life. Low -birth weight (LBW) refers to all newborn whose weight at birth is less than 2500g irrespective of the duration of gestation[2].

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[12].

Specialized nutritional surveillance and supplements are recommended for Low-Birth weight (LBW) babies to promote optimum growth and prevent sub-clinical nutrient deficiencies. Infant feeding practices should be strengthened and integrated with the existing health care programs to reach all the beneficiaries[13]. Mothers need to acquire knowledge in order to perform highly complex care taking skills that ensure survival of low -birth weight newborn.

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[14]. When the investigator was posted in the clinical, he had communication with the primipara mothers of Low-birth weight neonates, while providing care. During that communication the investigator understood that, the primipara mothers had a lack of health awareness regarding care of their own Low-birth weight neonates. Hence this information made me to this study among the primipara mothers, with the help of health education in the form of Low-birth weight neonatal care information booklet.

2. Need for the Study

The prevalence of low birth-weight exist universally in all populations and is the single most important determinant of the new born survival and for healthy growth and development. Low birth-weight with high mortality and morbidity continuous to be a major public health problem in India.

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[15].

Recently there is remarkable advance in knowledge & technology available for the care of very low birth-weight infants who make up for a growing segment of the neonatal intensive care unit population although this as resulted in a dramatic improvement in the mortality among infants born with the weight of less than 1,250 grams.

National child survival and safe motherhood 1992 reports that nearly 50% of all infant deaths occur in the neonatal period and the common causes is low birth-weight. Nurses are front line care providers. There are key persons involved with the care of the low birth-weight neonates round the clock. An assessment of nurses knowledge is felt to be essential for improve nursing care of low birth weight neonates.

Nursing trends are changing with the scientific and technological growth. Nurses must acquaint themselves with the changing trends. Hence it is felt that a study on the nurses knowledge regarding care of the low birth-weight neonates is a safety ladder to ensure skilled services. Thus it is felt that the assessment of nurses knowledge regarding care of the low birth-weight neonates will help in ensuring skilled in neonatal care which will help in decreasing the mortality rate of low birth weight neonates.

A study was conducted on effects of a very low birth weight newborn on family. The study results showed that the families of very low birth weight newborns suffer potential negative effects on their operational dynamics, which is associate to the clinical seriousness, the age and the neuro-psychomotor development of such children. It seems that the mother is the most affected member due to the situation imposed to the family, and the one who needs psychosocial support more frequently [16].

A study was conducted on maternal factors in extremely low birth weight infants who develop a spontaneous intestinal perforation. The study results showed that a spontaneous intestinal perforation in the extremely low birth weight infant is a neonatal disease related to placental inflammation [17].

Compared study on the large group of teens used to provide a reference point for the assessments, the adolescents with low birth weight had more motor problems. Their IQ scores were within the normal range, but on average were significantly lower than the average for their age group. Those who were male, who had injuries to the white matter (nerve tissue) of the brain on neonatal ultrasound and who spent more days on a ventilator as an infant were more likely to have motor difficulties. Social disadvantages, a lower fetal growth ratio (calculated by dividing birth weight by the median weight for the infant's age) and white matter injury also predicted lower IQ scores[18].

"The finding that, independent of social risk, specific prenatal, prenatal and neonatal biological risk factors are associated with cognitive and motor outcomes as late as adolescence runs counter to the view that, absent severe disability, early biological risk factors are of little importance in later life," the authors conclude. "The prevention of white matter injury and the need for mechanical ventilation may be key to improving motor outcomes, whereas the prevention of intrauterine growth retardation (or perhaps impaired head growth) and white matter injury may be key to improving cognitive outcomes [19].

Low birth weight is one of the most serious challenges in maternal and child health in both developed and developing countries. It is the single most important factor that determines the changes of child survival. Nearly 50% of neonatal deaths occur among LBW babies. The survivors among them are at a high risk of developing malnutrition, recurrent infections and neuro-developmental handicaps.[9] About 1 in every 13 babies in the United States is born with low birth weight Advances in newborn medical care have greatly reduced the number of deaths associated with low birth weight. However, a small percentage of survivors develop mental retardation, learning problems, cerebral palsy, and vision and hearing loss. So considering all above facts and dates we thought that it is important to conduct study on knowledge of nurses on prevention of low birth weight babies and to educate regarding prevention of low birth weight babies[20].

3. Literature Review

3.1 Review of literature related to structured education programme

Kadam,A.(2014) found that Structured education programme was highly effective to improve the knowledge score and to improve the attitude score of subjects/ caregiver towards colostomy care of patient [3].Anjum,S.(2014)conducted study to assess knowledge of contraceptives methods and appraisal of health education among married women and concluded After the health education married women knowledge was improved to 100% about female sterilization followed by condom 99%, skin implants 86%, oral pills 85% and emergency contraceptives 85%.Sociodemographic variable were significantly associated with existing knowledge and level of married women specially age at marriage, age at first child, occupation,, income ,education [4][5].

Babu, R. L. (2014) The findings of the study concluded that care takers had inadequate knowledge regarding non-curative care of terminally ill cancer patients. The planned education programme on non-curative care of terminally ill cancer patients was highly effective in improving the knowledge of care takers regarding non-curative care of terminally ill cancer patients.[6]

Shinde,M.(2014) concluded that demonstration regarding feeding of hemiplegic patient among caregivers was effective in increasing the skill of the caregivers regarding feeding of hemiplegic patient [7]. Deshmukh M (2014) concluded that the structured education was effective on knowledge and practice of staff nurses regarding venous access device care [9].Study findings from Bhudhagaonkar, J.(2014) revels that structured education is effective

regarding menstrual hygiene practices among adolescent girls[10].whereas Shinde, M(2014) found that there is gradual improvement in the sleep quality after back massage on 3 consecutive days the back massage has effect on quality of sleep among ICU patients[11].

A study was conducted in North Carolina, USA, to promote lactation among mothers of very Low-Birth weight infants. Maternal stress was measured after counseling with the parental stressor scale. The results revealed that after lactation counseling, 100% of Initial Breast-feeding Group (IBG) and 85% of Formula feed Group (IFG) initiated breast milk expression for a total lactation initiation rate of 94%. And counseling mothers of Very Low-Birth weight infants increases the incidence of lactation initiation and breast milk feeding without increasing maternal stress and anxiety [21].

A study was conducted in USA, revealed mothers experiences to provide Kangaroo Care for this pre-term newborns, during their hospital stay. The study had used transcendental phenomenology to analyze the experiences of mothers providing Kangaroo Care for their newborns. 10 women who provided Kangaroo Care for their pre-term newborn 32-36 completed weeks , weighing 1500 – 3000gms, with APGAR scores 6 or greater at 1minute , 7or greater at 5 minute. The study concludes that collected data revealed Kangaroo Care facilitates bonding and enhances maternal – infant acquaintance, even in the Neonatal Intensive Care Unit (NICU) environment [22].

A study was conducted in USA, the objective was to explore the feasibility, usefulness and outcomes of a pilot program to support mothers in developing competencies for managing health problems of their Very Low-Birth weight (VLBW) infants. The study had used a randomized design. Samples were all mothers (Guided Participation (GP=20)) and Guidelines= 11 were at least 18 years old and English speaking. The collected data concludes that, findings indicate a longer intervention period, Guided Participation organized by infant problem episodes and enhancement of the Primary Health Nurse role in the content of interdisciplinary and interagency collaboration [23].

A study was conducted in Preto, which aimed at characterizing mothers accounts on the care given to the health of children with Low-Birth weight at birth during their first and second years of life by means of interview with a group of 11 mothers of children from Ribeiao Petro-SP. The study had used exploratory and descriptive design. The mothers pointed to difficulties with breast feeding, the babies, diet and medication use. The mothers also referred to concerns about intercurrence re-hospitalizations and psychomotor development, which results in the need for professional support in order to evaluate and follow the growth and development process of children within family's everyday life[24].

A study was conducted in USA, , to describe how mothers of pre-term infants who are learning to nipple feed view their own and their infant's role in the feeding process. The study was a descriptive, comparative study and the samples were 22mothers of Low-Birth weight infants. The results concludes that, the co-regulation scores ranged from 1-6, with a mean score of 3.3 (standard deviation=1.4) mothers scoring was higher on the co-regulation measure were significantly in order and their infants were younger gestationally at birth. The study concludes that, understanding feeding from the parent's perspective can guide clinicians as they support the development of parents feeding skills [26].

A study was conducted in Urgency, to determine whether there is evidence to support the use of Kangaroo Mother Care in Low-Birth weight infants as an alternative to conventional care after the initial period of stabilization with conventional care. The sample of 1362 infants were included and the investigator had used Randomized trials, and the study concludes that, Kangaroo Mother Care appears to reduce severe infant morbidity without any serious deleterious effect reported, there is still insufficient evidence to recommend , its routine use in Low-weight infants[27].

A study was conducted in German, to find out whether there is an association between the number of pre-term infants admitted to Neonatal Unit per year and neonatal mortality. The study had used data from a state-wide quality assurance program and samples were 3930 newborns below 32 completed weeks gestation post-natal mothers were admitted during the years 2004 and 2005. The results concludes that, mortality below 28 completed weeks of gestation was significantly lower in hospitals admitted more than 50 premature infants < 32 completed weeks of gestation per year compared to smaller hospitals. The study concludes that, survival rate of immature infants is significantly higher if treated in larger Neonatal Care Units with a minimal annual volume of more than 40-50 premature <32weeks Gestational age [28].

A study (2007) was conducted on Comparison between the perinatal risk inventory and the nursery neurobiological risk score for predicting development in high-risk newborn infants among 102 low birth weight babies, Padova, Italy. The aim of the study was to compare Scheiner's Perinatal Risk Inventory (PERI) with Brazy's Neurobiological Risk Score (NBRS) when applied at discharge, in predicting developmental delay at 24 months of age. The study revealed that in the cohort studied, 75.5% of the patients had a normal MDI, while 24.5% showed a delayed performance (8.8% mildly and 15.7% severely so); the PDI was normal in 74.5% patients, whilst 25.5% had a delayed performance (9.8% mildly and 15.7% severely so)[14].

A study (2007) was conducted on Low birth weight, but not postnatal weight gain, aggravates the course of nephrotic syndrome in Germany. The results showed that six children were born small gestational age (birth weight <-1.5 standard deviation score), and 56 were born as appropriate for gestational age (AGA). The extent of weight gain between birth and 24 months of age did not influence the course of disease. [12]

4. Problem Definition

To assess the effectiveness of planned teaching on knowledge of selected risk factors related to low birth weight

babies among antenatal mothers in selected hospital at Vidarbha region.

5. Material and Methods

According to Shinde M (2007), Research approach refers to the overall plan for obtaining answers to the research questions and for testing the hypothesis. The research designs spells out the strategies that the researcher adopts to develop information that is accurate, objective and interpretable [60] and it helps the researcher in selection of subjects, manipulation of independent variable, observation of a type of statistical analysis to be used to interpret the data[8].

5.1 Research approach

Interventional research approach is used in this study. This approach was selected because the aim of this research study was to evaluate the effectiveness of planned teaching in improving the knowledge of selected risk factors related to low birth weight babies among antenatal mothers.

5.2 Research design

In the present study Quasi experimental one group pre test post test research design was used for the study.

5.3 Variables

5.3.1 Independent variable:
The planned teaching on selected risk factors related to low birth weight babies.

5.3.2 Dependent variable:
The dependent variable in this study is knowledge of antenatal mothers.

5.4 Setting of the Study

Setting is the physical location and condition in which data collection takes place. This study is conducted in selected hospitals at Vidarbha region (M.S.) India. The investigator found the setting appropriate to conduct the study because adequate number of antenatal mothers were available who could taken for the study

Name of hospitals are
1. AVBRH Hospital Sawangi Meghe Wardha.
2. Matru sewa sangh maternity hospital, Nagpur.

5.5 Population

5.5.1 Target population
In this study the target population was the antenatal mothers in selected hospitals of Vidarbha region.

5.5.2 Accessible population
The accessible population for this study was the antenatal mothers in selected hospitals at Vidarbha region.

5.6 Variables

5.6.1 Independent variable
The independent variable in this study is planned teaching on selected risk factors related to low birth weight babies.

5.6.2 Dependent variable
The dependent variable in this study is knowledge of antenatal mothers.

5.7 Sample

Antenatal mothers

5.7.1 Sample Size
In this study sample size was 100 antenatal mothers.80 sample from AVBRH Sawangi Meghe wardha & 20 sample from Matru sewa sangh maternity hospital, Nagpur.

5.7.2 Sampling Technique
The sampling technique used in the study was non probability convenient sampling. Used to hand pick cases.

5.7.3Criteria for Sample Selection
Inclusion criteria
- Willing to participate in the study
- Available during data collection.
- Able to read and understand Marathi or Hindi

Exclusion criteria
- Multigravida
- Who have attended previous class regarding risk factors related to low birth weight babies.

5.8 Method of Data Collection
Tools of data collection: Structured questionnaire consists of two sections
Section I consists of demographic variables of the antenatal mothers to be participated in the study e.g. Age, religion, type of family, previous knowledge regarding low birth weight babies, source of knowledge.
Section II consists of 30 questions on knowledge regarding selected risk factors related to low birth weight babies.

5.9 Scoring
- Score 1 was given for correct answer
- Score 0 was given for wrong answer
- Knowledge was graded from poor knowledge to excellent knowledge, based on scores.

5.10 Development of Planned Teaching

On selected risk factors related to low birth weight babies.
- Intervention in terms of planned teaching.
- The planned teaching was developed for antenatal mothers.

6. Result And Discussion

- In this study 42%of the subjects belonged to age group of 19 years, 58% of subjects belonged to age group of 20 years, 76% subjects were from nuclear family, and 24%

subjects from joint family, 79% antenatal mothers from Hindu religion, 1% from Muslim religion, and 20% from Buddhist religion.

- The finding show that in pre test score, 47% of sample were having average knowledge, 49% of samples having good knowledge score and 4% samples having 4% very good knowledge where as in post test scores only 4% of samples were having good knowledge ,73% of samples having very good knowledge and 23% samples having excellent knowledge. The findings show that the tabulated 't' value for n-1 i.e. 99 degree of freedom is 1.98. The calculated values are 27.24 respectively for knowledge regarding factors affecting low birth weight babies. The calculated 't' values are much higher than the tabulated values at 5% level of significance which is statistically acceptable level of significance. Hence it is statistically interpreted that the planned teaching regarding selected risk factors related to low birth weight babies was effective. So thus the H_1 is accepted. There is no significant association between age, religion, type of family.
- The planned teaching significantly brought out their improvement in the knowledge regarding selected risk factors related to low birth weight babies, antenatal mothers in selected hospitals of Vidarbha region. Analysis of data showed that there is significant difference between pretest and posttest knowledge.

7. Conclusion

After the detailed analysis, this study leads to the following conclusion. There was a significant increase in the knowledge of subjects after the introduction of planned teaching. To find the effectiveness of planned teaching student 't' test was applied and 't' value was calculated, post test score was significantly higher at 0.05 level than that of pre-test score. Thus it was concluded that planned teaching on selected risk factors related to low birth weight babies was found effective as a teaching strategy.

- Demographic variables did not show a major role in influencing the pre test and post test knowledge score among antenatal mothers.
- Hence based on the above cited findings, it was concluded undoubtedly that the written prepared material for planned teaching by the investigator in the form of lesson plan helped the antenatal mother to improve their knowledge on factors related to low birth weight babies.

8. Future Scope

Nursing Services

- It can be used as a guide and can serve as reinforcement to the health education.
- This study will help the nurses for coordinating health care services to health care professionals.

Nursing Education

- Educators will help students, colleagues, and junior staff to be trained in using planned teaching regarding factors related to low birth weight.

Nursing Administration

Findings of the study can be used by the Nursing Administrators in creating policies and plans for providing education to the staff nurses and care takers. It will help them to plan and organize and in give continuing education to nurses and to others for applying and updating the knowledge of selected risk factors related to low birth weight babies.

Nursing Research

- Other researchers may utilize the suggestions and recommendations for conducting further study.

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Author Profile

Archana Maurya is working as Professor, Department of Child Health Nursing, SRMMCON Sawangi Meghe Wardha (M.S.)

Sr Josy CMC[2] is working as Professor in SRMMCON Sawangi Meghe Wardha (M.S.)