

A Study To Assess The Effectiveness Of Video Assisted Neonatal Care Instruction On Knowledge Of Mothers, Growth Indicators And Morbidity Status Of Neonates At Selected Tertiary Care Hospital.

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Abstract

Background:

Among the life span of the childhood period, the neonatal period is very crucial to a large extent which determines the overall health status of the child and in turn adult life. The objectives were to assess the effectiveness of video-assisted neonatal care instruction on knowledge of mothers, growth indicators, and morbidity status of their neonates.

Methods and materials:

A quantitative evaluative approach with pre and post-test control group design was used. The study tools were developed by an extensive review of the literature and expert guidance. The validity & reliability of the tools was established. The sample size was 50 mothers and they were selected by using a random sampling technique, 25 mothers were equally allotted both in the study and control group. Obtained written consent from each participant before collecting the data and confidentiality of data were maintained.

Results:

The collected data were tabulated and analyzed by descriptive and inferential statistics. Study group mother's pretest mean score was $M=14.26 \pm 3.014$ and control group mother's pretest mean score was $M=13.85 \pm 2.698$ and study group mother's posttest mean score was $M=28.05 \pm 2.335$ and control group mother's posttest mean score $M=16.71 \pm 3.096$ with the obtained t value of $t=112.65$ & the Cohen's d value of 7.22. It showed that the study group mothers had a highly adequate level of knowledge when compared to mothers in the control group. At 1 month neonates in the study group had a higher mean weight of 3540.98 gms, length of 52.52 cms, and head circumference of 35.12cms than the neonates in the control group at $p<0.001$ level. The majority of the neonates in the study group were healthy and 1.2% of neonates had illness whereas in the control group 21.30% of the neonates had an illness during the neonatal period.

Conclusion:

The video-assisted neonatal care instruction was highly effective in improving the mother's knowledge which in turn promotes the growth status of the neonates and also helps to reduce the neonatal morbidity and mortality rates.

Keywords:

Video-assisted neonatal care instruction, mothers, growth indicators, and morbidity status of neonates.

INTRODUCTION

Neonates are a vital link in the life cycle, spanning from conception to adulthood. The neonatal stage is defined as the first twenty-eight days after birth, in this stage major physiological and metabolic adaptation takes place. The morbidity and mortality in neonates are still alarming especially in developing countries. The newborn babies face the greatest risk of death in this period in an average globalized rate of 17 deaths per thousand live births in the year 2019. Nearly 24 lakhs of neonates died within 30 days of life in the year 2019, an approximate estimation was about 7,000 neonatal deaths every day. Three major causes for

death in the neonatal period world-wide are infections (around 36% which include pneumonia, severe sepsis, diarrhoea), 28% of preterm, about 23% of birth asphyxia and 13% due to other causes. Few changes among countries depending on their care and health education to mothers on care of neonates. The global load of neonatal mortality is primarily concentrated in poor and developing countries due to inadequate neonatal care. Ninety eight percent of the NMR occurs in developing countries. Before reaching the first birthday 1.72 million children die annually of which 72% of deaths occur during the first twenty eighth day of life. Mother's knowledge on care of neonates, delay in danger identification and decision making to seek medical care were main causes for NMR. Care of neonates had always been a traditionally and culturally vital role of mothers irrespective of their educational status, job status, family income level, family type and religion. Vital roles of all mothers are to fulfil the physical, psychological, social, emotional, intellectual needs of children. A mother belonging to any category plays an ideal role in these aspects. In India, parents especially mothers are the primary caregiver to neonates hence this care is mainly dependent on the mother's knowledge of the care of neonates. This study aims to assess the level of knowledge of the mothers on neonatal care and its related factors to achieving optimum neonatal care and also to measure the statistical and clinical effectiveness of video assisted neonatal care instruction on growth indicators (mainly weight, length and head circumference of neonates) and morbidity status of neonates.

According to the latest Sample Registration System (SRS) data, Tamil Nadu's Neonatal Mortality Rate (NMR) decreased by one point from 16 to 15 per 1,000 live births in 2018. In rural regions, it was 18/ (1,000 live births) while in urban areas, it was 12/ (1,000 live births). This is an area where we have to reduce the gap by improving the care seeking behaviour and appropriate health education on newborn care among pregnant and postnatal mothers in the rural areas in view to reduce neonatal morbidity and mortality.

Statement of the Problem

A study to assess the effectiveness of video assisted neonatal care instruction on knowledge of mothers, growth indicators and morbidity status of neonates at selected tertiary care hospital.

Aim

The aim is to develop structured video assisted neonatal care instruction for the mothers and to evaluate the mother's knowledge on neonatal care and its effectiveness by measuring changes in growth indicators (weight, length and head circumference) and morbidity status of neonates.

Specific objectives

1. To assess the existing level of knowledge on neonatal care among the study and control group of mothers.
2. To determine the effectiveness of video assisted neonatal care instruction on the knowledge of mothers.
3. To determine the effectiveness of video assisted neonatal care instruction on growth indicators and morbidity status of neonates.
4. To find out the correlation between the knowledge of mothers on neonatal care and the growth indicators & morbidity status of neonates.

METHODS AND MATERIALS

A quantitative evaluative approach with pre and post-test control group design was used. The study tools were developed by an extensive review of the literature and expert guidance. The validity & reliability of the tools was established. The present study was conducted at antenatal clinic at Obstetrics and gynaecological department of selected tertiary care hospital Trichy. The sample size was 50 mothers and they were selected by using a random sampling technique, 25 mothers were equally allotted both in the study and control group. Obtained written consent from each participant before collecting the data and confidentiality of data were maintained. The researcher obtained written permission from the respective authorities of the selected study area. Both verbal and written consent were obtained from all participants. Each participant was assured that the collected data would be used only for the study purpose. All the study participants were informed about their participation in the research, objectives and time involvement of the study. No interference to the routine care of the participants while collecting data. The mothers in study group received the information on neonatal care through educational intervention

and also, they received hospital routine information through doctors, nurses and student nurses. Educational intervention on neonatal care was administered through video at seminar hall at Obstetrics and Gynaecology Out Patient Department. The educational intervention was about 35 minutes. The control group mothers were not involved in video assisted neonatal care instruction. They received hospital routine information through doctors, nurses and student nurses.

RESULTS AND DISCUSSION

Based on the demographic characteristics most of the mothers in study and control groups were in the age group of 21-30 years. Majority of the mothers in study and control groups belonged to Hindu religion, majority of them residing in urban area and studied up to diploma and graduate level. Most of the mother's income both in study and control groups was Rs.10, 000 /-to Rs. 20,000/- and they belonged to nuclear family. Most of the mothers were primi mothers. Mothers in study and control groups (30.0% & 29.4%) were received information on neonatal care from the printed material & mass media and health workers (26.7% & 31.5%) respectively. In regard to obstetric variables of the Neonates shows that 90.5% and 89.4% of the neonates in study group & control group delivered in the gestational weeks of 38- 42 weeks respectively. Most of the neonates in both groups were delivered by normal delivery and caesarean section. Most of the neonates in study and control group were females. Birth order of the most of the neonates was first order. The posttest mean knowledge scores of mothers in study group (M=28.05) was higher than the control group (M=16.71) with the obtained t value of 112.654 and the Cohen's d value was 7.22 ($p < 0.001$). The results clearly indicated that there was a statistically significant variation in the knowledge scores of mothers after the administration of video assisted neonatal care instruction. Hence the research hypothesis H1 is strongly accepted.

S.No	Dimensional knowledge	Pre test		Post test		t value	P value
		Mean	SD	Mean	SD		
1	Introduction to neonate	1.12	.601	1.86	.378	-17.869	< 0.001
2	Breast feeding	5.56	1.553	10.26	1.130	-48.904	< 0.001
3	Thermoregulation measures	2.10	.999	4.72	.613	-40.599	< 0.001
4	Infection control measures	2.26	.839	4.67	.629	-39.764	< 0.001
5	Care of elimination measures	1.40	.630	2.78	.472	-29.030	< 0.001
6	Immunization	1.00	.586	1.84	.372	-19.173	< 0.001
7	identification of danger signs	.82	.594	1.91	.302	-26.191	< 0.001

Table described that Dimensional analysis of knowledge scores on various aspects of neonatal care among study group mothers shows that there was a statistical improvement of knowledge scores of study group mothers in all 7 dimensions of the neonatal care. The t value in all dimensions of neonatal care shows that there was a statistically significant improvement of knowledge ($p < 0.001$). The research hypothesis H1 is strongly accepted. Effectiveness of video assisted neonatal care instruction on knowledge of study group mothers in relation to their selected demographic variables reveal that the knowledge scores of study group mothers improved significantly in terms of their demographic factors. The t value in all categories of demographic variables shows that statistically significant improvement in knowledge score at $p < 0.001$ level. It is proven that there was a statistical improvement in the knowledge score of mothers irrespective of their demographic variables.

Growth indicators of neonates at 1 month Weight at one month

Results shows that in study group, weight of neonates at 1 month shows that 92.2% of the neonates were normally nourished and 7.8 % of them were under nourished. In control group, weight of neonates at one month shows that 81.3 % of them were normally nourished, 16.2 % of them were under nourished and 2.6 % of them were severely under nourished.

Length at one month

In study group, length at one month shows that 96.7% of the neonates were normal and 3.3 % of neonates were had moderate stunting whereas in control group 94.9 % of the neonates were had normal length, 2.1% of neonates had moderate stunting and 3.0% of neonates had severe stunting.

Head circumference at one month

In study group, all neonates had normal head circumference at one month & in control group 98.3 % of neonates had normal head circumference and 1.7 % of the neonates had less than normal circumference.

The study findings regard to Effectiveness of video assisted neonatal care instruction on weight gain at one month showed that the mean difference between birth weight and weight at one month among experimental group neonates was 502.62 grams $\pm$ 45.76. The mean difference between birth weight and weight at one month among control group neonate was 451.69 grams $\pm$ 57.17642. The difference between mean weight gain difference of experimental and control group neonates was 50.92 grams. The calculated t test value between mean difference of birth weight and weight at one month among experimental and control group was 10.768. It shows that the video assisted neonatal care instruction was statistically effective ($p < 0.001$) in improving the neonatal weight gain. The cohens d value of weight gain difference between experimental and control group was 0.985.

Based on the analysis Effectiveness of video assisted neonatal care instruction on morbidity status of neonates The mean morbidity score in experimental group neonates was $M = 12.05 \pm 0.443$, it was less than that of mean morbidity score in the control group neonates was $M = 13.40 \pm 2.824$ and the t value was 7.362. The results were having a significant difference in morbidity score between study and control group neonates ($p < 0.001$). Cohen's d value was 0.674; it shows that the video assisted neonatal care instruction was statistically and clinically significant in reducing the morbidity status of neonates.

It was observed that the mean weight gain at 1 month in the experimental group neonates was $M = 502.6214$ gms, it was higher than the control group neonates $M = 451.6979$ gms. The mean length gain in the study group neonates was $M = 2.49$ cm, it was higher than that of the control group neonates $M = 2.12$. The mean gain in the head circumference among experimental group neonates was $M = 1.20$ cm, it is higher than that of the control group neonates $M = 1.11$. The 't' values of weight gain were $t = 10.768$, length gain was $t = 6.477$. The cohen's d value for weight gain was $d = 0.985$ (large effect) and the length gain was $d = 0.593$ (Medium effect). Results show that 1.20 % of the neonates in the study group had morbidities at one month and the morbidity was quite high (21.3%) among neonates in the control group. The average morbidity score in study group neonates was $M = 12.05 \pm 0.443$, it was less than that of mean morbidity score in control group neonates $M = 13.40 \pm 2.824$ and the t value was -7.362. The study results indicate that there was a significant difference in morbidity score between study and control group neonates ($p < 0.001$). Cohen's d value = 0.674; it shows that the video assisted neonatal care instruction was statistically significant in reducing the morbidity status of neonates.

Results reveal that the relative risk of developing morbidities in the control group neonates was 17.234 at 95 % CI. This indicates that the video assisted neonatal care instruction were effective in reducing the morbidity rates among neonates in the study group. The study result shows that the correlation between knowledge gain of perinatal mothers and neonatal growth indicators (weight gain) was $r = 0.499$, (length gain) $r = 0.462$ and (head circumference gain) $r = 0.149$. It clearly shows that there was a positive correlation between knowledge scores of mothers and growth indicators of neonates. The study group r value was higher than the overall r value. It statistically shows that when the knowledge of the mothers on neonatal care improves, growth indicators of neonates also increase.

Regard to association between the growth indicator (birth weight) of neonates with their selected obstetric variables The results show that there is a strong association between the gestational week ($\chi^2 = 348.795$) and birth weight of the neonates at $p < 0.001$ level. There is no association between other demographic variables like mode of delivery ($\chi^2 = 0.321$), gender ($\chi^2 = 1.984$) and the birth order of children ($\chi^2 = 1.854$) and birth weight of the neonates. Similar findings given by Girma, S. (2019) conducted a study on factors

associated birth weight of the newborn. The study was conducted at public health hospital, Ethiopia. The study was a case-control study. The study was conducted among low birth weight babies. The sample size was 279. The study results show that the selected factors like no iron and folic acid supplementation, no nutritional health education, maternal under nutrition and maternal anaemia were strongly associated with birth weight of the new born

CONCLUSION

This study showed that the structured video assisted neonatal care instruction (VANCI) was useful to increase the mother's knowledge and good neonatal care practices which in turn promotes the growth and reduces the morbidity and mortality rates of neonates.

The most favourable growth status and less morbidity status help the parents in reducing the stress, reducing the number of hospital visits, reducing the number of hospitalizations thereby also decreasing the financial burden of the parents. Neonatal health is a major issue in the Government agenda; this type of structured education also decreases the economic burden of the country. The neonatal period is the basis for the quality of the rest of life. Any complications during this period may lead to irreversible damage that totally spoils the quality of life. Through this study, the researcher concludes that structured health teaching (VANCI) during antenatal period helps to promote the mother's knowledge on neonatal care that facilitates optimal growth promotion and decline of neonatal morbidity and mortality rates.

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