

Effect of Health Education on Prevention of Neonatal Illness Among Primipara Mothers Residing at Selected Urban Regions, Maharashtra State

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Abstract: Background: The neonatal period is a highly vulnerable stage of life, and primipara mothers may have limited experience in identifying and preventing common neonatal illnesses. Maternal health education can improve knowledge regarding newborn care and preventive measures. Objective : To assess the effect of health education on prevention of neonatal illness among primipara mothers. Methods: A quantitative approach with a true experimental randomized control group design was reported in the dissertation. A total of 100 primipara mothers were included, with 50 mothers in the experimental group and 50 in the control group. Knowledge was assessed using a 30-item Structured Interview Schedule (SIS). A pre-test was conducted in both groups. Health education on prevention of neonatal illness was administered to the experimental group, while the control group did not receive the intervention. A post-test was conducted after one week using the same SIS. Descriptive and inferential statistics were used for analysis. Results: The mean pre-test knowledge score was 7.90 ± 1.88 in the experimental group and 6.58 ± 1.40 in the control group. After the intervention, the mean post-test score increased to 24.88 ± 2.24 in the experimental group compared with 9.62 ± 2.33 in the control group. The mean knowledge gain was 16.98 ± 2.58 in the experimental group and 3.04 ± 2.54 in the control group. The difference between groups was highly significant ($t = 27.17$, $p = 0.0001$). Age and educational status were significantly associated with post-test knowledge, whereas occupation, per capita income and religion were not significantly associated. Conclusion: The findings demonstrate that structured health education was effective in improving knowledge regarding prevention of neonatal illness among primipara mothers. Incorporating planned maternal education into routine antenatal and postnatal services may strengthen maternal awareness and early recognition of neonatal health problems.

Keywords: Health education, neonatal illness, primipara mothers, maternal knowledge, newborn care, structured interview schedule

I. INTRODUCTION

The neonatal period extends from birth up to four weeks of life.(0-<28days).¹This phase is considered one of the most sensitive and vulnerable stages in a child's life and therefore requires special attention and care. Mothers are the primary caregivers of newborns, and enhancing their knowledge regarding neonatal care is essential for improving their confidence and ability to care for their infants effectively. Maternal awareness regarding neonatal care plays a vital role in promoting the overall health of society. Health education is considered one of the fastest and most effective methods for improving public health awareness. According to the World Health Organization, the promotion of maternal and child health can be achieved through proper education and awareness programs.²According to World Health Organization reports, nearly one-third of neonatal deaths occur due to inadequate newborn care and infections such as pneumonia, tetanus, and neonatal diarrhea. Most of these deaths can be prevented through simple preventive measures such as clean delivery practices and effective management of neonatal complications, particularly infections. Daily newborn care practices, including breastfeeding and eye care, also play an important role in preventing neonatal morbidity and mortality. India continues to carry one of the highest burdens of neonatal health problems in the world.³ Neonates are particularly susceptible to acute respiratory tract infections, which

are highly contagious and can be transmitted directly from an infected person through coughing, sneezing, or hand-to-hand contact as well as contact with contaminated clothing. ⁴India contributes over 30%, nearly 3.9 million global neonatal deaths. The health of newborns is influenced by family practices, especially maternal care. Raising awareness about neonatal issues can reduce mortality and morbidity. The present study aimed to assess the knowledge of primipara mothers regarding common newborn challenges.⁵In 2022, approximately 2.3 million babies died during the first month of life, making the neonatal period the most dangerous stage in a child's survival. Nearly 6,500 neonatal deaths occur each day, accounting for about 47% of deaths among children under five years of age. These findings highlight the urgent need for high-quality antenatal and postnatal care services, along with effective maternal education programs, to improve neonatal survival and prevent avoidable neonatal deaths.⁶

II. OBJECTIVE

The objective of this study is:

1.To assess the effect of health education on prevention of neonatal illness among primipara mothers.

III. METHODS

A quantitative approach was adopted and randomized experimental and control group design (true experimental research design) was used for this study. The study was carried out in the selected urban region of Maharashtra. The setting were chosen based on accessibility, administrative support, and adequate sample size. A simple random sampling techniques was used to select primipara mothers who met the inclusion criteria : those who consented to participate in the study. and who was available at the time of data collection. Written consent was obtained from the samples and pre-test has been assessed for all the 100 primipara mothers from experimental and control group using structured interview schedule (SIS) for assessing knowledge. Then the health education was given for all primipara mothers residing at selected urban regions to whom the pre-test was conducted. After 7 days, the post test was taken and the data was analyzed. Statistical Analysis- Data were coded, tabulated and analyzed using descriptive and inferential statistics. Frequency, percentage, mean, standard deviation and mean percentage were used to describe the data. Paired t-test was used to compare pre-test and post-test knowledge scores within groups. An unpaired t-test was used to compare mean knowledge gain between the experimental and control groups. One-way ANOVA was used to examine associations between post-test knowledge scores and selected demographic variables. The level of significance was set at $p < 0.05$.

IV. RESULTS

Table 1: Demographic Profile: distribution of Primipara Mothers according to their demographic characteristics.

n=100

Demographic Variables	Experimental Group(n=50)	Control Group(n=50)
Age(yrs)		
19-23 yrs	9(18%)	8(16%)
24-28 yrs	20(40%)	14(28%)
29-33 yrs	12(24%)	14(28%)
≥34 yrs	9(18%)	14(28%)
Occupation		
Private Employee	9(18%)	9(18%)
Government Employee	5(10%)	6(12%)
Self - Employee	9(18%)	13(26%)

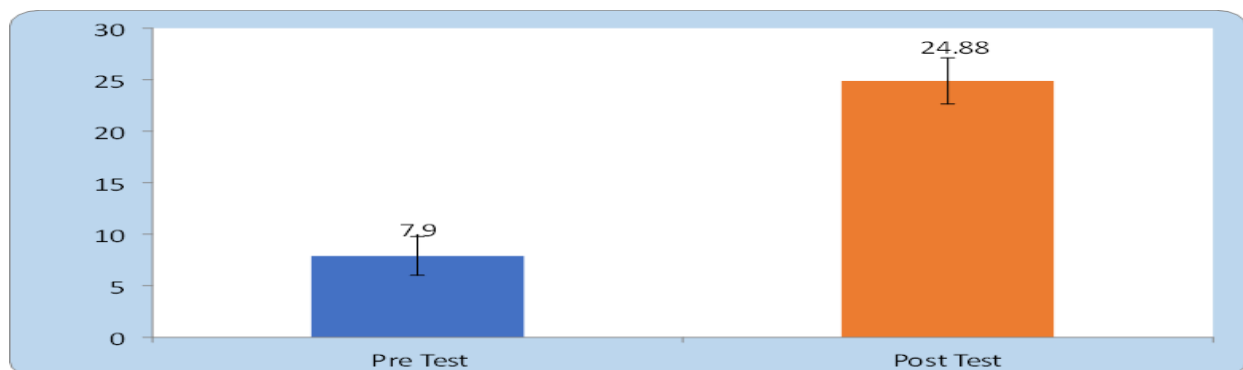
Housewife	27(54%)	22(44%)
Per Capita Income(Rs)		
≤10000 Rs	19(38%)	20(40%)
10001-15000 Rs	14(28%)	10(20%)
15001-20000 Rs	10(20%)	9(18%)
>20000 Rs	7(14%)	11(22%)
Religion		
Hindu	16(32%)	23(46%)
Muslim	3(6%)	3(6%)
Buddhist	13(26%)	13(26%)
Others	18(36%)	11(22%)
Educational Status		
Illiterate	18(36%)	21(42%)
Primary	12(24%)	7(14%)
Secondary	11(22%)	10(20%)
Higher Secondary	6(12%)	10(20%)
Degree and above	3(6%)	2(4%)

Graphical Representation: This table shows the comparison of pretest and post test knowledge scores of Primipara mothers regarding prevention of neonatal illness among primipara mothers residing at selected urban region of Maharashtra State. Mean, standard deviation and mean difference values are compared and student's paired 't' test is applied at 5% level of significance. The tabulated value for $n=50-1$ i.e. 49 degrees of freedom was 2.00. The calculated 't' value

i.e. 46.47 are much higher than the tabulated value at 5% level of significance for overall knowledge score of Primipara Mothers which is statistically acceptable level of significance. Hence it is statistically interpreted that the Health Education on knowledge regarding prevention of neonatal illness among primipara mothers residing at selected urban region of Maharashtra State was effective. Thus the H_1 is accepted.

Table 7: Significance of difference between knowledge score in pre and posttest of Primipara Mothers of Experimental Group

Test	Mean	SD	Mean Difference	t-value	p-value
Pre Test	7.90	1.88	16.98±2.58	46.47	0.0001 S, $p<0.05$
Post Test	24.88	2.24			



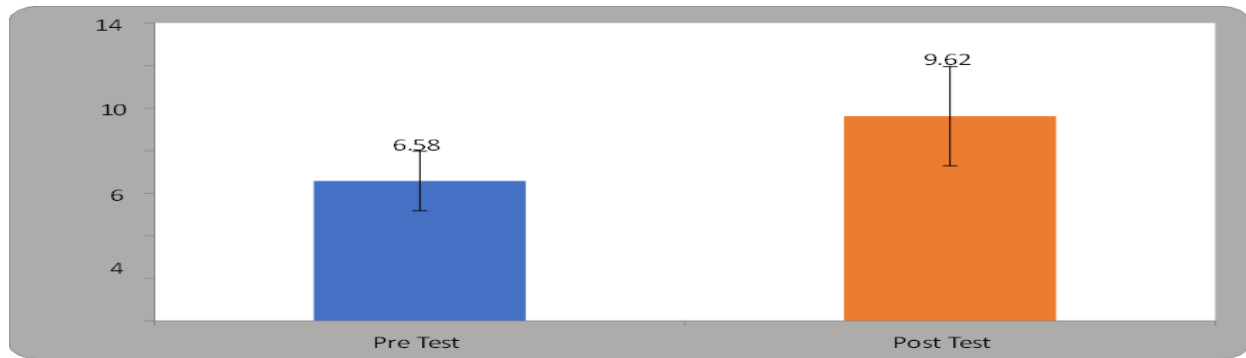
Graph10: Significance of difference between knowledge score in pre and post test of Primipara Mothers of Experimental Group

This table shows the comparison of pretest and post test knowledge scores of Primipara mothers regarding prevention of neonatal illness among primipara mothers residing at selected urban region of Maharashtra State. Mean, standard deviation and mean difference values are compared and student's paired 't' test is applied at 5% level of significance. The tabulated value for $n=50-1$ i.e., 49 degrees of freedom was 2.00. The calculated 't' value i.e., 8.43

are much higher than the tabulated value at 5% level of significance for overall knowledge score of Primipara Mothers which is statistically acceptable level of significance. Hence it is statistically interpreted that the Health Education on knowledge regarding prevention of neonatal illness among primipara mothers residing at selected urban region of Maharashtra State was effective. Thus, the H_1 is accepted.

Table 3: Significance of difference between knowledge score in pre and posttest of Primipara Mothers of control group

Test	Mean	SD	Mean Difference	t-value	p-value
Pre Test	6.58	1.40	3.04±2.54	8.43	0.0001 S, $p<0.05$
Post Test	9.62	2.33			



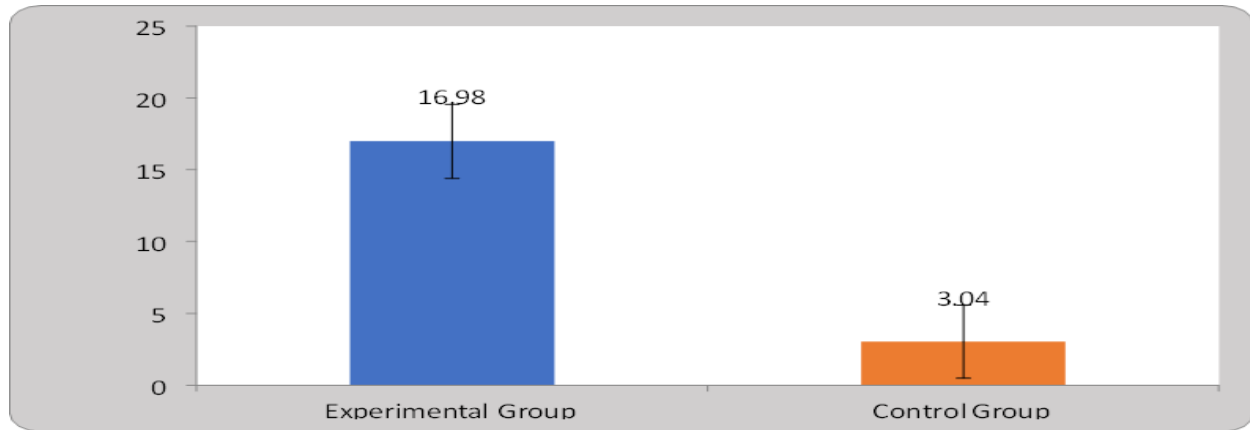
Graph 11: Significance of difference between knowledge score in pre and post test of Primipara Mothers of Control Group

This table shows the comparison of mean difference pretest and post test knowledge scores of Primipara mothers regarding prevention of neonatal illness among primipara mothers residing at selected urban region of Maharashtra State in experimental and control group. Mean, standard deviation and mean difference values are compared and student's unpaired 't' test is applied at 5% level of significance. The tabulated value for $n=50+50-2$ i.e. 99 degrees of freedom was 1.98. The calculated 't' value i.e. 27.17

are much higher than the tabulated value at 5% level of significance for overall knowledge score of Primipara Mothers which is statistically acceptable level of significance. Hence it is statistically interpreted that the Health Education on knowledge regarding prevention of neonatal illness among primipara mothers residing at selected urban region of Maharashtra State was effective in experimental group. Thus, the H_2 is accepted.

Table 9 : Significance of mean difference between knowledge score in pre and posttest of Primipara Mothers of Experimental and Control Group

Group	Mean	SD	t-value	p-value
Experimental Group	16.98	2.58	27.17	0.0001 S, $p<0.05$
Control Group	3.04	2.54		



Graph 12: Significance of mean difference between knowledge score in pre and post test of Primipara Mothers of Experimental and Control Group

Association with demographic variables: Posttest knowledge scores were significantly associated with age of primipara mothers and educational status of primipara mothers.

V. DISCUSSION

The findings of the present study revealed that primipara mothers had inadequate baseline knowledge regarding prevention of neonatal illness before the intervention. In the experimental group, the mean pre-test knowledge score was 7.90 ± 1.88 , whereas in the control group it was 6.58 ± 1.40 . The present study also identified significant associations between post-test knowledge scores and demographic variables such as age and educational status. Mothers aged 34 years and above and those with higher educational qualifications demonstrated better knowledge scores. Similar associations were reported by Joshi, Mehta, and Kamble, who identified maternal education and maturity as important predictors of improved maternal knowledge and neonatal care practices.

VII. CONCLUSION

The present study concludes that the structured health education programme was effective in improving knowledge regarding prevention of neonatal illness among primipara mothers residing in a selected urban region of Maharashtra State. The pre-test findings showed inadequate baseline knowledge among most mothers, indicating the need for educational intervention. Following the implementation of the

health education programme, a significant improvement in post-test knowledge scores was observed in the experimental group, while the control group showed only minimal improvement. These findings suggest that structured health education can effectively improve maternal knowledge regardless of socioeconomic background.

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