A Study to Assess the Effectiveness of Structured Teaching Programme on Knowledge Regarding Management of Physiological Jaundice Among Postnatal Mothers in Selected Hospital of The City: A Pre-Experimental Study

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***Abstract*—Physiological jaundice is a common and usually benign condition observed in newborn during the early neonatal period. It occurs due to the immaturity of the neonatal liver, which is unable to efficiently conjugate and excrete bilirubin. As a result, unconjugated bilirubin accumulates in the blood, leading to visible yellow discoloration of the skin and sclera. Physiological jaundice typically appears within the first week of life and affects approximately 60% of term neonates and nearly 80% of preterm neonates. Although the condition is generally self-limiting, improper recognition and delayed response may increase the risk of adverse outcomes. Phototherapy remains the primary treatment for physiological jaundice requiring medical intervention. It involves exposing the newborn to specific wavelengths of light, which help convert unconjugated bilirubin into a water-soluble form that can be excreted in urine and stool. In India, neonatal jaundice continues to pose a significant health challenge due to a high neonatal birth rate, early postnatal discharge, and inadequate maternal awareness. Studies have reported that nearly 60% of term and 80% of preterm neonates develop jaundice during the early neonatal period. A regional study from North-East India revealed that 34% of neonates developed pathological jaundice, with ABO incompatibility identified as the most common cause. These findings highlight the magnitude of the problem and the urgent need for effective preventive, educational, and early intervention strategies. Evidence suggests that inadequate maternal knowledge is a major factor contributing to delayed identification and management of neonatal jaundice. A descriptive study among postnatal mothers revealed that a majority had inadequate knowledge regarding neonatal jaundice, its causes, and warning signs, and a significant association was found between low maternal knowledge and delayed health-seeking behaviour ($p < 0.01$). The findings underscore the need to improve maternal understanding to ensure early detection and timely management of jaundice-related complications. the present study aims to assess the effectiveness of a structured teaching program on knowledge regarding the management of physiological jaundice among postnatal mothers in a selected hospital of the city. The findings of this study may provide valuable evidence to strengthen maternal education strategies and contribute to improved neonatal health outcomes. OBJECTIVES OF THE STUDY To find out effectiveness of Structured teaching programme on knowledge regarding management of physiological jaundice among postnatal mothers. To assess the pre-existing knowledge regarding management of physiological jaundice among postnatal mothers in selected hospital of the city. To find-out the association between the pre-test knowledge score with their selected demographic variables. MATERIAL AND METHOD In this study Quantitative Research approach is used. Pré-experimental one group, pre-test post-test research design was used for the study. A pre-test was administered by means of structural questionnaire depicted as O_1 and then structured teaching programme given and depicted as X, A post test was conducted using the same structured questionnaire depicted as O_2. It includes the base line information of postnatal mothers i.e., Age, Educational qualification, Occupation, family income, Type of family, residence, gravida, previous source of information on physiological jaundice. The present study was conducted in a selected hospital of the city after obtaining permission from concerned authority. non probability convenient sampling technique was used. A self-structured knowledge**

questionnaire was constructed by reviewing the related literature and consultation with experts. The questionnaire consisted of 25 multiple choice Question on knowledge regarding management of physiological jaundice. Total score is 25. Each question carries 1 mark and zero for the wrong answer. In this study, Reliability of the tool was determined by administering tool to 10 samples. The Spearman- Brown split half method was used for questionnaire. The tool was said to be reliable if the correlation coefficient was more than or equal to 0.90. The correlation coefficient 'r' of the tool was 0.84. Which was equal to 0.70 and hence the tool was found to be reliable. RESULT In the pre-test assessment of knowledge regarding management of physiological jaundice among postnatal mothers, 7.14% had poor knowledge, 35.72% had average knowledge, 47.14% had good knowledge and 10% had very good knowledge. None of the respondents had excellent knowledge. The minimum pre-test knowledge score was 1 and the maximum score was 19. The mean knowledge score was 10.94±3.761.the post-test assessment of knowledge regarding management of physiological jaundice among postnatal mothers, none of the respondents had poor, average or good knowledge. About 51.43% had very good knowledge and 48.57% had excellent knowledge. The minimum post-test score was 16 and the maximum score was 25. The mean post-test knowledge score was 20.10±1.965. The comparison of pre-test and post-test knowledge scores among postnatal mothers. The mean pre-test score was 10.94±3.761 and the mean post-test score was 20.10±1.965. The mean difference was 9.15±3.98. The calculated t value was 19.212 with 69 degrees of freedom, which is higher than the tabulated t value at 0.05 level of significance. The p value was 0.000 which is less than the acceptable level of significance ($p<0.05$). Hence, it is interpreted that the structured teaching programme was effective in improving the knowledge regarding management of physiological jaundice among postnatal mothers.

I. INTRODUCTION

Physiological jaundice is a common and usually benign condition observed in newborn during the early neonatal period. It occurs due to the immaturity of the neonatal liver, which is unable to efficiently conjugate and excrete bilirubin. As a result, unconjugated bilirubin accumulates in the blood, leading to visible yellow discoloration of the skin and sclera. Physiological jaundice typically appears within the first week of life and affects approximately 60% of term neonates and nearly 80% of preterm neonates. Although the condition is generally self-limiting, improper recognition and delayed response may increase the risk of adverse outcomes. Inadequate feeding can lead to dehydration and increased bilirubin reabsorption from the intestines, worsening the condition. Therefore, educating mothers about proper breastfeeding techniques and the importance of maintaining hydration in neonates is essential. Additionally, ensuring that mothers are aware of the signs of ineffective breastfeeding, such as poor latch, inadequate milk transfer, and infrequent wet diapers, can help prevent worsening hyperbilirubinemia. Lactation support programs and counselling services have been found to enhance breastfeeding success rates, thereby reducing the incidence of physiological jaundice. Phototherapy remains the primary treatment for physiological jaundice requiring medical intervention. It involves exposing the newborn to specific wavelengths of light, which help convert unconjugated bilirubin into a water-soluble form that can be excreted in urine and stool. Physiological jaundice is a prevalent neonatal condition worldwide, affecting nearly 60% of term and 80% of preterm newborns. Although most cases are benign and self-limiting, severe hyperbilirubinemia can lead to acute bilirubin encephalopathy and kernicterus, resulting in long-term neurological impairment and death. Globally, an estimated 1.1 million infants develop severe hyperbilirubinemia annually, accounting for approximately 114,000 neonatal deaths and more than 75,000 cases of kernicterus each year. [1] These statistics indicate that neonatal jaundice continues to be a major contributor to neonatal morbidity and mortality, particularly in low- and middle-income countries. Despite advances in neonatal care, early detection and timely management of physiological jaundice remain challenging due to gaps in parental awareness and postnatal follow-up. Since jaundice often develops after hospital discharge, mothers are the primary caregivers responsible for identifying early signs and seeking medical care. Inadequate maternal knowledge regarding normal progression, danger signs, and management of jaundice may result in delayed intervention, increasing the risk of severe complications In Maharashtra, similar trends have been observed. A tertiary care–based study conducted in GMC, Akola, reported that among 108 jaundiced neonates, physiological jaundice was observed in 44.4% of cases, while 55.6% had pathological causes. Sepsis, ABO incompatibility, and Rh incompatibility

were identified as the leading etiological factors. These regional findings emphasize the importance of strengthening maternal awareness and early identification practices to reduce neonatal complications related to jaundice. Evidence suggests that inadequate maternal knowledge is a major factor contributing to delayed identification and management of neonatal jaundice. A descriptive study among postnatal mothers revealed that a majority had inadequate knowledge regarding neonatal jaundice, its causes, and warning signs, and a significant association was found between low maternal knowledge and delayed health-seeking behaviour ($p < 0.01$).

The findings underscore the need to improve maternal understanding to ensure early detection and timely management of jaundice-related complications. Interventional studies have demonstrated that planned and structured teaching programmes significantly enhance maternal knowledge regarding neonatal jaundice. A quasi-experimental study assessing the effectiveness of a planned teaching programme among postnatal mothers showed a marked improvement in mean knowledge scores from pre-test to post-test, with statistically significant results ($t = 12.87$, $p < 0.001$). These findings indicate that structured educational interventions play a vital role in improving maternal preparedness and confidence in managing neonatal jaundice

Overall, the reviewed evidence clearly indicates that insufficient maternal knowledge remains a major gap in the prevention and early management of physiological jaundice. Postnatal mothers often receive limited structured education during their hospital stay due to time constraints, early discharge, and heavy patient load. This results in inadequate understanding of neonatal jaundice and delayed recognition of danger signs at home. Therefore, there is a strong need to assess the effectiveness of structured teaching programs in improving maternal knowledge and promoting timely management of physiological jaundice. Structured teaching programs can serve as a cost-effective and sustainable strategy to empower mothers, enhance early detection, and reduce neonatal morbidity and mortality. Hence, the present study aims to assess the effectiveness of a structured teaching program on knowledge regarding the management of physiological jaundice among postnatal mothers in a selected hospital of the city. The findings of this study may provide valuable evidence to strengthen maternal education strategies and contribute to improved neonatal health outcomes.

II. OBJECTIVES OF THE STUDY

- Primary Objective

1. To find out effectiveness of Structured teaching programme on knowledge regarding management of physiological jaundice among postnatal mothers.

- Secondary Objectives

1. To assess the pre-existing knowledge regarding management of physiological jaundice among postnatal mothers in selected hospital of the city.
2. To find-out the association between the pre-test knowledge score with their selected demographic variables.

III. MATERIAL & METHODS

In this study Quantitative Research approach is used. Pré-experimental one group, pre-test post-test research design was used for the study. A pre-test was administered by means of structural questionnaire depicted as O_1 and then structured teaching programme given and depicted as X, A post test was conducted using the same structured questionnaire depicted as O_2. It includes the base line information of postnatal mothers i.e., Age, Educational qualification, Occupation, family income, Type of family, residence, gravida, previous source of information on physiological jaundice. The present study was conducted in a selected hospital of the city after obtaining permission from concerned authority. non probability convenient sampling technique was used. A self-structured knowledge questionnaire was constructed by reviewing the related literature and consultation with experts. The questionnaire consisted of 25 multiple choice Question on knowledge regarding management of physiological jaundice. Total score is 25. Each question carries 1 mark and zero for the wrong answer. In this study, Reliability of the tool was determined by administering tool to 10 samples. The Spearman- Brown split half method was used for questionnaire. The tool was said to be reliable if the correlation coefficient was more than or equal to 0.90. The correlation coefficient 'r' of the tool was

0.84. Which was equal to 0.70 and hence the tool was found to be reliable.

IV. RESULTS

Section-A

This section deals with the analysis and interpretation of data regarding demographic variable of participants in terms of frequency and percentage.

Percentage wise distribution of postnatal mothers according to their demographic characteristics.

Sr. No.	Variable	Groups	*(f)*	*(%)*
1	Age	18-22 years	34	49.00
		23-27 years	27	39.00
		28-32 years	07	10.00
		33 years & above	02	3.00
2	Educational Qualification	Primary School	00	0.00
		Secondary School	07	10.00
		Higher Secondary	57	81.43
		Graduate & Postgraduate	06	8.57
3	Occupation	Housewife	12	17.14
		Daily wage worker	05	7.14
		Self-employed	25	35.72
		Government Employee	28	40.00
4	Family income	Less than 20,000 per month	12	17.14
		20001-25000 per month	22	31.43
		25001-30000 per month	22	31.43
		Above 30001 per month	14	20.00
5	Type of family	Nuclear	23	32.86
		Joint	38	54.29
		Extended family	09	12.85
6	Residence	Rural	26	37.14
		Urban	39	55.72
		Semi-Urban	05	7.14
7	Gravida	Primigravida	55	78.57
		Multigravida	15	21.43
8	Previous source of information on physiological jaundice	Family and Friends	18	25.71
		Healthcare professionals	09	12.86
		Internet/social media	40	57.14
		No prior information	03	4.29

Section-B

TO ASSESS THE PRE-EXISTING KNOWLEDGE REGARDING MANAGEMENT OF PHYSIOLOGICAL JAUNDICE AMONG POSTNATAL MOTHERS IN SELECTED HOSPITAL

Assessment with level of pre-test knowledge

n=70

Level of pre-test knowledge score	Score range	Level of Pre-test Knowledge score	
		No of PNC mothers	Percentage
Poor	0-5	05	7.14%
Average	6– 10	25	35.72%
Good	11 – 15	33	47.14%
Very Good	16 – 20	07	10.00%
Excellent	21 – 25	00	0.00%

Minimum Score	01
Maximum Score	19
Mean Knowledge Score	10.94 ±3.761
Mean % Knowledge Score	43.76 ± 15.04

Assessment with level of post-test knowledge score (post-test)
n=70

Level of Post Test Knowledge score	Score Range	Level of Post Test Knowledge Score	
		No of PNC mothers	Percentage
Poor	0-5	00	0.00%
Average	6– 10	00	0.00%
Good	11 – 15	00	0.00%
Very Good	16 – 20	36	51.43%
Excellent	21 – 25	34	48.57%
Minimum Score		16	
Maximum Score		25	
Mean Knowledge Score		20.10 ±1.965	
Mean % Knowledge Score		80.40 ± 7.86	

Significance of difference between knowledge score in pre and post-test of PNC mothers
n=70

Test	Mean	SD	Mean Difference	t-value calculated	S	p-value	Remark
Pretest	10.94	3.761	9.15±3.98	19.212	69	0.0001	Significant Association

Section-C

ASSOCIATION OF PRETEST KNOWLEDGE REGARDING MANAGEMENT OF PHYSIOLOGICAL JAUNDICE AMONG POSTNATAL MOTHER IN SELECTED HOSPITAL OF THE CITY WITH THEIR SELECTED DEMOGRAPHIC VARIABLES

Association of Pre-Test Knowledge score among postnatal mothers in relation to their age in years
n=70

Demographic Variable	Group	Poor	Average	Good	Very good	Excellent	χ^2 Value	p value
Age	18-22 years	3	13	16	2	0	10.652	0.032 S. P<0.05
	23-27 years	0	9	14	4	0		
	28-32 years	1	2	3	1	0		
	33 years & above	1	1	0	0	0		

Association of Pre-Test Knowledge score among postnatal mothers in relation to their education
n=70

Demographic Variable	Group	Poor	Average	Good	Very good	Excellent	χ^2 Value	p value
Education	Primary School	0	0	0	0	0	7.092	0.021 S P.<0.05
	Secondary School	0	1	4	2	0		
	Higher Secondary	4	21	28	4	0		
	Graduate & Postgraduate	1	3	1	1	1		

Association of Pre-Test Knowledge score among postnatal mothers in relation to their occupation
n=70

Demographic Variable	Group	Poor	Average	Good	Very good	Excellent	χ^2 Value	p value
Occupation	Housewife	0	3	7	2	0	4.872	0.845 N.S.>0.05

Association of Pre-Test Knowledge score among postnatal mothers in relation to their family income per month
n=70

Demographic Variable	Group	Poor	Average	Good	Very good	Excellent	χ^2 Value	p value
Family Income per month	Less than 20,000 per month	0	2	9	1	0	9.199	0.419 N.S.>0.05
	20001-25000 per month	3	7	9	3	0		
	25001-30000 per month	1	10	8	3	0		
	Above 30001 per month	1	6	7	0	0		

Association of Pre-Test Knowledge score among postnatal mothers in relation to their type of family
n=70

Demographic Variable	Group	Poor	Average	Good	Very good	Excellent	χ^2 Value	p value
Type of family	Nuclear	2	5	14	2	0	7.619	0.002 S. P<0.05
	Joint	2	14	17	5	0		

Association of Pre-Test Knowledge score among postnatal mothers in relation to their residence
n=70

Demographic Variable	Group	Poor	Average	Good	Very good	Excellent	χ^2 Value	p value
Residence	Rural	3	11	9	3	0	6.306	0.390 N.S.>0.05
	Urban	2	14	20	3	0		
	Semi-Urban	0	0	4	1	0		

Association of Pre-Test Knowledge score among postnatal mothers in relation to their gravida
n=70

Demographic Variable	Group	Poor	Average	Good	Very good	Excellent	χ^2 Value	p value
Gravida	Primigravida	3	20	28	4	0	3.736	0.013 S. P<0.05
	Multigravida	2	5	5	3	0		

Association of Pre-Test Knowledge score among postnatal mothers in relation to their previous source of information
n=70

Demographic Variable	Group	Poor	Average	Good	Very good	Excellent	χ^2 Value	p value
Previous source of information	Family and Friends	1	6	8	3	0	8.232	0.511 N.S.>0.05

V. CONCLUSION

In the pre-test assessment of knowledge regarding management of physiological jaundice among postnatal mothers, 7.14% had poor knowledge, 35.72% had average knowledge, 47.14% had good knowledge and 10% had very good knowledge. None of the respondents had excellent knowledge. The minimum pre-test knowledge score was 1 and the maximum score was 19. The mean knowledge score was 10.94±3.761.the post-test assessment of knowledge regarding management of physiological jaundice among postnatal mothers, none of the respondents had poor, average or good knowledge. About 51.43% had very good knowledge and 48.57% had excellent knowledge. The minimum post-test score was 16 and the maximum score was 25. The mean post-test knowledge score was 20.10±1.965.the comparison of pre-test and post-test knowledge scores among postnatal mothers. The mean pre-test score was 10.94±3.761 and the mean post-test score was 20.10±1.965. The mean difference was 9.15±3.98. The calculated t value was 19.212 with 69 degrees of freedom, which is higher than the tabulated t value at 0.05 level of significance. The p value was 0.000 which is less than the acceptable level of significance ($p<0.05$). Hence, it is interpreted that the structured teaching programme was effective in improving the

knowledge regarding management of physiological jaundice among postnatal mothers.

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