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A study to assess the effectiveness of structured teaching program on knowledge regarding neonatal jaundice among primipara mothers at selected hospitals of Una, H.P

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Abstract
Background: Globally**,** 50% of term and 80% of preterm babies developed neonatal jaundice, which usually appear in 2 to 4 days after birth, and resolves spontaneously after 1 to 2 weeks. jaundice is caused by bilirubin deposition in the skin most jaundice in newborn infants is results of increased red cell breakdown and decreased bilirubin excretion.
Objectives: The objective of the study was to assess and compare the pre-test and post-test level of knowledge regarding the neonatal jaundice among primipara as measured by structured knowledge questionnaire and to find out the association between post knowledge score with their selected demographic variables.
Methodology: A quasi experimental study with pre-test -post -test design is conducted to assess the effectiveness of structured teaching program on knowledge regarding neonatal jaundice among primipara mothers at selected hospitals of Una H.P. A total 60 primipara mothers were selected for the study by using purposive sampling technique. Informed consent and assent were taken from the samples before conducting the study. Questionnaire method was used to collect the data. Then the collected data was analyzed by using descriptive and inferential statistics.
Result: The results showed that primipara mother's pre-test knowledge score regarding neonatal jaundice was adequate 21(33.3%), moderate 39(65.0%) and inadequate knowledge was 1(1.7%). Whereas in post-test knowledge score adequate knowledge was 52(86.7%) and moderate knowledge was 8(13.3%). The pretest mean score is 12.28 ±3.009and in post-test mean score is 15.85±2.161. There was no significant association between the knowledge of primipara mothers regarding neonatal jaundice and there selected demographic variables.
Conclusion: Study concluded that there is significant increase in the level of knowledge among primipara mothers after administration of structured teaching program neonatal jaundice**.**

Keywords: Knowledge, primipara mothers, stp, neonatal jaundice

Introduction

A newborn infant, or neonate, is a child under 28days of age. During these first 28 days of life, the child is at highest risk of dying. The vast majority of newborn deaths take place in developing countries where access to health care is low [1].

Neonatal jaundice is a yellowish discoloration of the skin and other tissues of a newborn. A bilirubin level more than 5mg /dl manifests neonatal jaundice. In newborn jaundice is detected by watching the skin, newborn have an apparent icteric sclera, and yellowish of the face extending down to the chest. [3]

In neonates the dermal icterus is first noted in the face and as the bilirubin rising level proceed caudal to trunk and then to the extremities. Hyperbilirubinemia in the first 24 hours often result in the hemolytic disease of newborn erythroblastosis fetalis an abnormal rapid rate of RBC destruction [4].

In neonates, jaundice tends to develop because of two factors, the breakdown of fetal hemoglobin and the relatively immature hepatic metabolic pathway which are unable to conjugate and so excretion of bilirubin is as quickly as an adult, this causes an accumulation of bilirubin in the blood leading to the symptoms of jaundice [5]. Other cause of neonatal jaundice is large or small for gestational age, prematurity, trisomy syndrome, use of oxytocin in labor, presence of bruising cephalohematoma and a family history of neonatal jaundice [6]

Amongst all age group neonates are most susceptible to mortality and morbidity. According to UNICEF newsletter on April 24,2008 out of every four, a child dies under the age of one in the world, one is and Indian child. The infant mortality rate in the country is 67% per thousand live births, in which neonatal mortality contributes 43.4 / 1000 against the annual death of 9/1000(2008). In India neonatal jaundice, contribute 4.55% death in neonatal period [7].

The WHO reveals the sources of incidence of Hyperbilirubinemia is 50 to 60, 000 neonates reported 2% has total serum bilirubin level over 20mg /dl. Thus, total serum bilirubin level in normal range is 0.3to 1mg/dl 0.15%had level over 25mg/dl and 0.01%has over 30mg/dl. Thus we can accept that 50,000 in chat 60,000 and 400new born with bilirubin level is greater than 20mg/dl and 30mg/dl. Hyperbilirubinemia is one of the most common problems encountered in newborns [8].

Worldwide in 2016, more than 2.6 million newborns died, out of this half of the deaths occur in India. In the early neonatal period, neonatal jaundice was the seventh global cause of neonatal mortality, whereas it is also the seventh and eighth leading cause of death in south Asia. Severe neonatal jaundice accounted for 30.8% deaths of neonate in India [9].

There are so many complications related to the neonatal jaundice such as mortality, hearing loss, incidence of Kernicterus, adverse events caused by hospitalization as parents infant bonding, failure of treatment, length of hospital stay and need for transfusion. Kernicterus refers to the yellow staining of the deep nuclei of the brain, which includes the symptoms such as athetoid cerebral palsy, hearing loss, and dental enamel dysplasia. By educating the mothers about neonatal jaundice and its complications so they can prevent complications.

Neonatal jaundice prevention is important in the first week of life especially in the majority of the countries with the highest global burden of neonatal mortality. Postnatal mother's response about neonatal jaundice depends on their knowledge on neonatal jaundice and what innate risk factors could cause a complication if not appropriately treated in their newborns. Lack of enough information or wrong information about neonatal jaundice may explain as a cause for poor decision and delayed to seek medical care [10].

Early detection and treatment are the key strategies to prevent severe neonatal jaundice. An understanding of the knowledge level of mother on neonatal jaundice helps to identify the gap and target area for interventions which help to prevent chronic morbidity and neonatal mortality. Many of the risk factor of neonatal jaundice can be minimized if mother knowledge on neonatal jaundice is improved, which ultimately helps to formulate and evolve strategies to identify high risk cases [11].

Therefore, this study, aimed to assess the knowledge on neonatal jaundice among mothers in selected hospitals of Una. the information obtained could be used to assist health care providers and policy makers in designing educational programme to improve knowledge on neonatal jaundice among mothers [12].

Caring for these newborns those are actually ill is paramount important and also challenged today it require a high -tech nursing care, to implement this, nurses caring should be knowledgeable and skillful.

For successful management, the staff nurse should have adequate knowledge on early detection, level of serum bilirubin and intervention. The overall aims of the study is to provide information about neonatal jaundice to prevent complications of neonatal jaundice by mothers. Considering the above study findings, the researcher understood that the mothers have special need for Education.

Methodology

The study was conducted during the period from November 2021 to June 2022 in the state of HP, India. A sample of 60 primipara neonatal jaundice mothers participated in this study with the prior permission from Medical Superintendent of Hospital to conduct the study. The written consent as well as assent from participants was collected prior to the study. Quasi-Experimental Research Design "Pre-test- Post-test design" was used in this study. Primipara mothers admitted in postnatal ward, available during the period of data collection, willing to participate in the study and able to understand Hindi were included in the study. Multipara mothers and sick mothers were excluded. A total 60 primipara mothers were selected for the study by using Purposive sampling technique. Data was collected by structured knowledge questionnaire regarding neonatal jaundice.

Description of Tool

1. **Demographic Variables:** Age of Mothers in Years, Religion, Education status of mothers, Occupation of mothers, Type of family, Family Income per month, Health services available from, Type of delivery, Birth of baby, Neonates age (days), Neonatal gender, Weight of neonate, neonates feed methods, neonates age at onset of jaundice (days)
2. **Self-structured questionnaire:** The tool consists of total 20 questions that include 1 to 3 questions related to general information of neonatal jaundice. 4 questions related to causes of neonatal jaundice.5 questions related to sign and symptoms. 6 to 7 questions related to diagnostic test of neonatal jaundice. 8 to19 questions related to management of neonatal jaundice. 20 question related to complications of neonatal jaundice. Each item had a single correct answer. Every correct answer assigned a score of 1 mark and every wrong answer assigned a zero score. The maximum score was 25 and minimum was zero.

Procedure

The final data collection of the study was carried out in the regional hospital Una (H.P) in the months of May, June and July. Formal written permission was obtained from the hospital authorities for conducting the study. Before starting the procedure of data collection, the researcher obtained permission from the staff nurses also. Self-introduction was given to the primipara mothers and rapport was build up with them. Nature and purpose of the study was explained assurance was given to the primipara mothers about the confidentiality of their responses. Written consent as well as assent was obtained from the study subjects. The questionnaire was distributed to the subjects at one time. The subjects were explained to write the responses at their own. Suitable explanation was given by the researcher regarding writing the responses with clarification in case of any doubt. The time taken by each respondent for written the responses was 25 to 30 min. On day 1, pretest was conducted by using structured knowledge questionnaire regarding neonatal jaundice. The structured teaching program was given by the same day followed by the pretest. STP was given by the researcher for 45 minutes to the primipara mothers with the help of discussion method along with chart, pamphlets, and leaflets. At the end of STP, All the doubts were clarified by the researcher and pamphlets are handover to the primipara mothers for further reference. Then on fifth day the post- test was conducted for the same group by using the same structured knowledge questionnaire. All the performance was collected together and analyzed by the researcher.

Data Analysis: Descriptive and Inferential statistics was used to analyze the data.

Descriptive statistics

Frequency and percentage distribution, range, mean and standard deviation was used to describe the sample characteristics.

Inferential statistics

Paired "t" test to compare mean score of personal hygiene. One-way ANOVA and t-test for association of post-test score of primary school children with selected sample characteristics.

Result

Frequency and Percentage distribution of socio - demographic Variables of samples according to the Age of Mothers in Years, Religion, Education status of mothers, Occupation of mothers, Type of family, Family Income per month, Health services available from, Type of delivery, Birth of baby, Neonates age (days), Neonatal gender, Weight of neonate, neonates feed methods, neonates age at onset of jaundice (days).

According to age of mother less than 25 in age group more than 35years (41.6%). less than half were in the age group of 26- 30 (46%), less than one third were in the age group of 31-35 (11.6%). According to religion majority of religion belongs to Hindu (93.3%),less than one third belong to Muslim, less than one third belong to Sikh (6.66%), less than one third belong to others (0%).According to education less than one third were illiterate (5%), less than one third were educated primary (20%),less than half were educated secondary (46.6%),less than one third were degree (28.3%).According to occupation more than half were housewife (83.3%),less than one third were private job (10%),less than one third were government job (5%),less than one third were business (1.66%).According to type of family more than half belongs to nuclear family (61.6%), more than one third belongs to joint family (36.6%),less than one third belongs to extended family (1.6%), less than one third belongs to others (0%). According to family income less than one third had below 5000(0%), more than one third had 5000-10000(46.6%), less than one third had 10000-15000(20%),less than one third had above 15000(33.0%).According to health services less than one third availed from P.H.C (8.3%), less than one third from sub center (6.6%), less than one third from nursing home (0%),more than half from hospital (85%).According to type of delivery more than one third had normal delivery with episiotomy (40%), less than one third had normal delivery without episiotomy (8.3%), more than one third had cesarean section (51.6%).According to birth of baby more than one third were preterm (31.6%), more than half were term (63.3%),less than one third were post term (8.33%).According to age of neonates more than half were in the age group of 1-7 days (66.6%),less than one third were in the age group of 8-14 days (25%),less than one third were in the age group of 15-21 (6.66%), less than one third were in the age group of 21-28 (1.66%).According to gender of neonates half neonates were male (48.3%), more than half were female (51.6%). According to weight of neonatal one third had less than 2500 g (41.6%), less than one third had 2500g (30%), one third had more than 2500g (28.3%). According to neonatal feeding methods more than half had breastfeeding (78.3%), less than one third had artificial feeding (6.66%), less than one third had mixed feeding (15%). According to neonates age at onset of jaundice less than one third had first day of life (13.3%), more than half had second to seventh day of life (73.3%), and less than one third had after seventh day of life (13.3%).

Table 1: Frequency and Percentage distribution of socio - demographic Variables of samples (N = 60)

S. No.	Socio Demographic Variables	Frequency	Percentage%
1	**Age of Mother in Years**		
	a) Below -25	25	41.7%
	b) 26-30	28	46.7%
	c) 31-35	7	11.7%
2	**Religion**		
	a) Hindu	56	93.3%
	b) Muslim	0	0%
	c) Sikh	4	6.7%
	d) Others	0	0%
3	**Education Status Of Mothers**		
	a) Illiteracy	3	5%
	b) Primary school	13	21%
	c) Secondary school	28	46%
	d) Degree	16	26%
4	**Occupation of mothers**		
	a) Housewife	50	83.3%
	b) Private Job c) Government Job	6 3	10.0% 5.0%
	d)Business/Company	1	1.7%
5	**Type of Family**		

	a) Nuclear Family	37	61.7%
	b) Joint Family	22	36.7%
	c) Extended Family	1	1.7%
6	**Family Income per month**		
	a) Below-5000	10	16.7%
	b) 5000-10000	25	41.7%
	c)10000-15000	13	21.7%
	d)Above-15000	12	20.0%
7	**Health Services available from**		
	a) PHC	5	8.3%
	b) Sub center	4	6.7%
	c) Nursing Home	0	0%
	d) Hospital	51	85.0%
8	**Type of delivery**		
	a) Normal Vaginal with episiotomy	24	40%
	b) Normal delivery without episiotomy	4	6.7%
	c) Lower segmental Caesarean Section	32	53.3%
9	**Birth of baby**		
	a) Preterm	17	28.3%
	b) term	38	63.3%
	c) post Term	5	8.3%
10	**Neonates Age(days)**		
	a) 1-7	40	66.7%
	b) 8-14	15	25.0%
	c) 15-21	4	6.7%
	d) 21-28	1	1.7%
11	**Neonates Gender**		
	a) Male	29	48.3%
	b) Female	31	51.7%
12	**Weight of Neonatal**		
	a) >2500g	25	41.7%
	b) 2500g	18	30%
	c) <2500g	17	28.3%
13	**Neonates Feed Methods**		
	a) Breast Feeding	47	78.3%
	b) Artificial Feeding	4	6.66%
	c) Mixed Feeding	9	15%
14	**Neonates Age at onset of Jaundice (days)**		
	a) First day of life	8	13.3%
	b) Second to Seventh day of life	44	73.3%
	c) After Seventh day of life	8	13.3%

Pre-test knowledge shows that more than half of primipara mothers were having moderate 39 (65.0%) level of knowledge whereas more than one third primipara mothers were having adequate level of knowledge 21 (33.3%).

Table 2: Frequency and Percentage Distribution of knowledge of primipara mothers regarding Neonatal Jaundice before administration

(N=60)

Level of knowledge	Frequency	Percentage (%)
Inadequate (0-6)	1	1.7%
Moderate (7-13)	39	65.0%
Adequate (14-20)	21	33.3%

Maximum score-20
Minimum score- 0

Post-test knowledge shows that majority of primipara mothers were having adequate 52(86.7%) level of knowledge whereas less than one third of mothers were having moderate level of knowledge 8(13.3%).

Table 3: Frequency and percentage distribution of knowledge of primipara mothers regarding neonatal jaundice after administration (N=60)

Level of knowledge	Frequency	Percentage (%)
Inadequate (0-6)	0	0.00%
Moderate (7-13)	08	13.3%
Adequate (14-20)	52	86.7%

Maximum score: 20
Minimum score: 0

depict that mean± Standard deviation pretest knowledge score of primipara mothers was 12.28±3.009, Median 12.00 with range of score 6-18.

Table 4: Range, Mean, Median, Standard Deviation of pretest knowledge scores of primipara mothers regarding neonatal jaundice (N=60)

Variable	Group	Actual Range	Range of Score	Mean± SD	Median
Knowledge regarding neonatal jaundice	STP (N=60)	0-20	6-18	12.28± 3.009	12.00

depict that mean ±Standard deviation pretest knowledge score of primipara mothers was15.85± 2.05, Median 16.00 with range of score 10-20

Table 5: Range, Mean, Median, Standard Deviation of posttest knowledge scores of primipara mothers regarding neonatal jaundice(N=60)

Variable	Group	Actual Range	Range of Score	Mean±SD	Median
Knowledge regarding neonatal jaundice	STP (N=60)	0-20	10-20	15.85± 2.161	16.00

Depicts that mean pretest knowledge score of primipara mothers 12.28 whereas mean post-test knowledge score was 15.85.

The computed "t" value (t =15.6, p=0.00) is found to be significant at 0.05 level of significance.

Thus it is inferred that there was a significant difference between mean pretest and posttest knowledge score of neonatal jaundice among primipara mothers after administrations of structured teaching programme.

Hence research hypothesis H1a was accepted and null hypothesis H01a was rejected.

Table 6: Mean, mean difference, Standard Deviation of difference, Standard error of mean difference and t value of, mean pretest and posttest knowledge score of primipara mothers regarding neonatal jaundice. (N=60)

Assessment	Mean ±SD	MD	SEMD	t value	Df	P-value
Pre-test Post- test	12.28±3.009 15.85±2.161	3.57	0.227	15.6	59	0.00*

*Significant ($p \leq 0.05$), t (59) =2.00

Table 7: Association between post-test knowledge score of primipara mothers with selected demographic variables

table shows that there was no significant association of post- test knowledge scores of primipara mothers with above mentioned selected demographic variables.

Hence a research hypothesis H2a was accepted and null hypothesis H02a was rejected.

Table: 7 One-way ANOVA and t value showing association of post test score of primipara mothers with selected sample characteristics

S.N.	Variable	Mean	df	F/t	P value
1	**Age of mother in years**				
	A) Below 25	16.16			
	b) 26-30	15.43	2/56	1.042	0.3
	c) 31-35	16.43			
	d) above 35	0.00			
2	**Religion**				
	a) Hindu	15.79			
	b) Muslims	0.00	1/58	0.74	0.3
	c) Sikh	16.75			
	d) others	0.00			
3	**Marital status**				
	a) married	16.9			
	b) unmarried	0.00	1/5	3.18	0.03
4	**Education status of mother**				
	a) illiteracy	14.33			
	b) primary school	16.00	3/56	1.160	0.3
	c) secondary school	15.57			
	d) degree	16.50			
5	**Occupation of mother**				
	a) housewife	15.68			
	b) private job	16.67	3/56	1.364	0.2
	c) government	17.67			
	d) business/company	14.00			
6	**Type of family**				
	a) nuclear family	15.95			
	b) joint family	15.91	2/57	2.711	0.07
	c) extended family	11.00			
	d) others	0.00			
7	**Family income per month**				
	a) below -5000	15.80			
	b) 5000-10,000	15.44	3/56	1.144	0.3
	c) 10,000-15,000	15.77			
	d) above 15000	16.83			
8	**Health services available from…**				
	a) PHC	15.80			
	b) Sub centre	15.00	2/57	0.331	0.7
	c) nursing home	0.00			

	d) hospital (govt/ private)	15.92			
9	**Type of delivery**				
	a) normal delivery with episiotomy	15.29			
	b) normal delivery without episiotomy	16.00	2/57	1.37	0.2
	c) lower segmental caesarean section	16.25			
10	**Birth of baby**				
	a) preterm	15.47			
	b) term	15.87	2/57	0.970	0.3
	c) post term	17.00			
11	**Neonates age**				
	a) 1-7	15.93			
	b) 8-14	15.93	3/56	0.358	0.7
	c) 15-21	14.75			
	d) 21-28	16.00			
12	**Neonates gender**				
	a) male	15.83			
	b) female	15.87	1/58	0.006	0.9
13	Weight of neonatal				
	a) >2500g	15.60			
	b) 2500g	15.56	2/57	1.181	0.3
	c) <2500g	16.53			
14	**Neonates feed methods**				
	a) breast feeding	15.98			
	b) artificial feeding	15.25	2/57	0.388	0.6
	c) mixed feeding	15.44			
15	**Neonates age at onset of jaundice**				
	a) first day of life	15.00			
	b) second to seventh day of life	16.05	2/57	0.837	0.7
	c) after seventh day of life	15.63			

NS = Not significant

Discussion

The present study showed that primipara mother's pre-test knowledge score regarding neonatal jaundice was adequate 21(33.3%), moderate 39(65.0%) and inadequate knowledge was 1(1.7%). Whereas in post-test knowledge score adequate knowledge was 52(86.7%) and moderate knowledge was 8(13.3%). Whereas the pretest mean knowledge regarding neonatal jaundice among primipara mothers was 12.28 ±3.009 and posttest knowledge score was 15.85±2.161

The finding is supported by the findings of the study conducted Ahire yogita et.al study to assess the knowledge regarding neonatal jaundice among mothers admitted at Bharati Hospital and research Centre of Pune city. The findings of the study show that inadequate knowledge 10(10%), moderate knowledge 56(56%), adequate 34(34%).

Conclusion

Following conclusions are drawn from the finding of the study

Based on the findings of the study, it can be concluded that the structured teaching programme through different Av-aids found to be very effective in improving the knowledge of primipara mothers regarding neonatal jaundice.

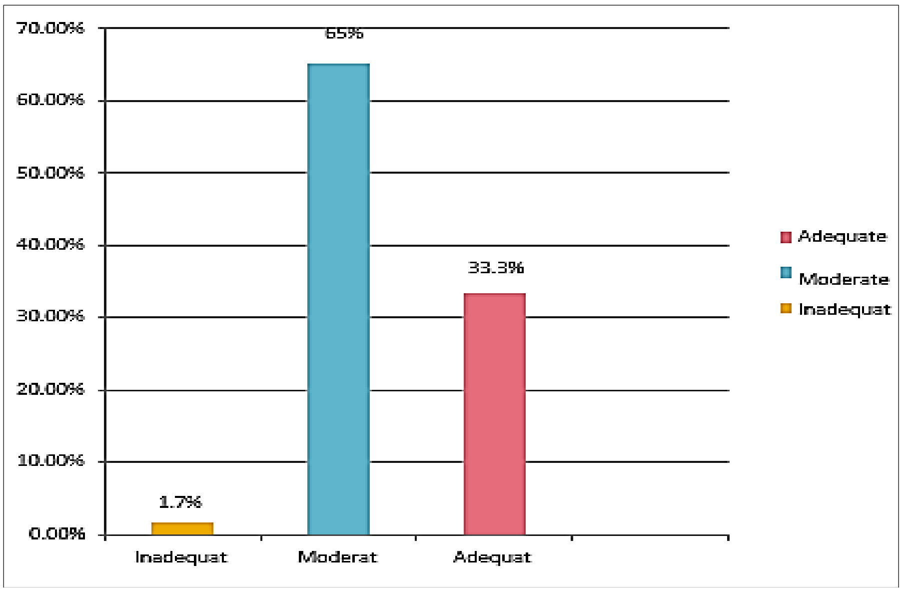

Fig 1: Bar Diagram showing pre- test knowledge score of primipara Mothers regarding Neonatal jaundice

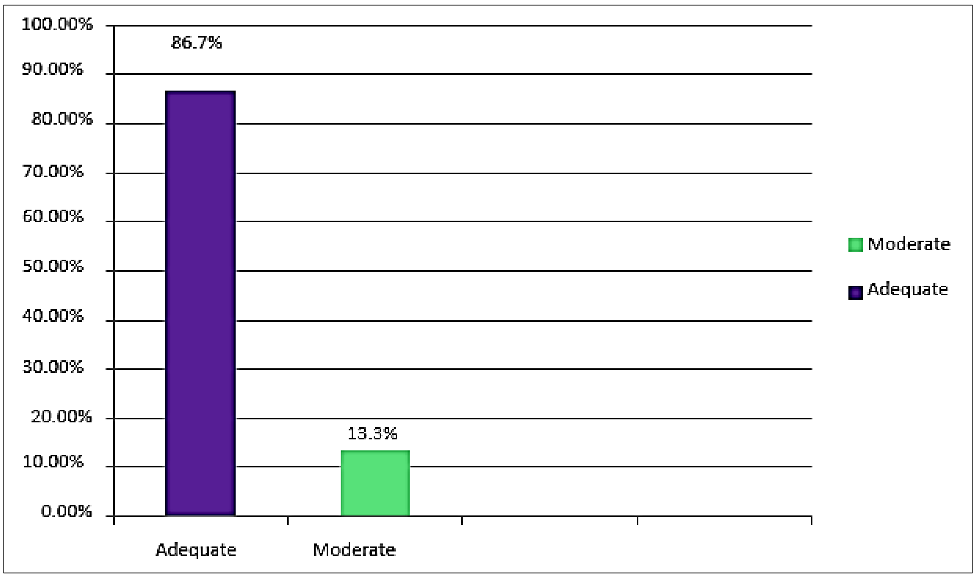

Fig 2: Bar Diagram showing post- test knowledge score of primipara Mothers regarding Neonatal jaundice

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