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Abstract

Neonatal jaundice is one of the most common and serious conditions requiring medical attention. Early discharge of neonates before the onset of jaundice would reduce access to treatments and mothers act critical role in managing condition. Therefore, this study set out to assess the mothers' knowledge of neonatal jaundice. A descriptive study was conducted from January to May 2018, using random sample of 100 mothers attended maternal and pediatric hospital in Soran city during antenatal visit. Data were collected through the use of a specially designed questionnaire for the purpose of the study. The finding of the study shows that 36% of mothers were in the age group of 25–30 years. Majorities (84%) were Muslim, 76% of them were housewives, and 49% was multipara. Another major finding revealed that most of the mothers (88%) had poor knowledge of neonatal jaundice. Results show a significant association between education level, occupation of mothers, and their knowledge of neonatal jaundice. This study revealed that mothers had poor knowledge and there was a dramatic lack of knowledge regarding causes and danger signs of neonatal jaundice. Education level and occupation status had a significant impact on mothers' knowledge. It is recommended more attention on educating mothers during antenatal visits, as well as proper training health-care providers, updating their knowledge and teaching methods.

Keywords

Assessment, Knowledge, Mother, Neonatal jaundice

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RESEARCH ARTICLE

Assessment of Knowledge of Neonatal Jaundice among Mothers Attending Maternal and Pediatric Hospital in Soran City

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ABSTRACT

Neonatal jaundice is one of the most common and serious conditions requiring medical attention. Early discharge of neonates before the onset of jaundice would reduce access to treatments and mothers act critical role in managing condition. Therefore, this study set out to assess the mothers' knowledge of neonatal jaundice. A descriptive study was conducted from January to May 2018, using random sample of 100 mothers attended maternal and pediatric hospital in Soran city during antenatal visit. Data were collected through the use of a specially designed questionnaire for the purpose of the study. The finding of the study shows that 36% of mothers were in the age group of 25–30 years. Majorities (84%) were Muslim, 76% of them were housewives, and 49% was multipara. Another major finding revealed that most of the mothers (88%) had poor knowledge of neonatal jaundice. Results show a significant association between education level, occupation of mothers, and their knowledge of neonatal jaundice. This study revealed that mothers had poor knowledge and there was a dramatic lack of knowledge regarding causes and danger signs of neonatal jaundice. Education level and occupation status had a significant impact on mothers' knowledge. It is recommended more attention on educating mothers during antenatal visits, as well as proper training health-care providers, updating their knowledge and teaching methods.

Keywords: Assessment; Knowledge; Mother; Neonatal jaundice

INTRODUCTION

Neonatal jaundice is a common condition worldwide. Studies reported that approximately all preterm babies and more than 60% of term newborns were developing jaundice in the 1st week of their life and their requiring medical attention.

Neonatal morbidity and mortality is still high in developing countries, especially in African, Asian, and Latin American, of which one of the most important contributing factors is jaundice (Behrman et al., 2004). Neonates' experience different problems from which, hyperbilirubinemia or jaundice is very common, life threatening and challenging are high (Neghabadi et al., 2015). National Collaborating Centre for Women's and Children's Health, 2010 mentioned neonatal jaundice as yellow coloration of the skin and the sclera in newborn babies that result from accumulation of bilirubin in the skin and mucous membranes.

The changing color of the skin and sclera is a result of excess bilirubin in which is produced by the normal breakdown of red blood cells. Normally, bilirubin passes through the liver and is excreted as bile through the intestines. Jaundice occurs when bilirubin builds up faster than a newborn's liver can break it down and pass it from the body. This is associated with a raised level of bilirubin >85 μmol/l (5 mg/dl) in the circulation, a condition known as hyperbilirubinemia (Aiswarya and Sajeeth, 2016), (National Collaborating Centre for Women's and Children's Health, 2010).

The effects of jaundice are often irreversible including lethargy, poor feeding, high pitched cry, seizures, hearing loss, cerebral palsy, and mental retardation (Dennery et al., 2001). Neonates may be sent home with their mothers earlier than the time of onset of jaundice, which would reduce access to treatments. It may be viewed as a normal finding, especially in regions that it commonly occurs, and this may delay treatment as well (Vaez, 2016).

Mothers should be adequately educated about the care of baby with jaundice and early identification of danger signs and also its complications (Dash, 2013).

There is no information available on how mothers deal with neonatal jaundice and their awareness for this

subject. Therefore, determining the level of mothers' knowledge and awareness regarding neonatal jaundice is of importance, to reduce the risk for future babies to develop jaundice, for early intervention and treatment (Kamara, 2014).

The purpose of the present study is to find out what mothers know about neonatal jaundice, including jaundice presentation sites, danger signs, causes, complications, diagnosis ways, and effective treatments. The information and findings will be used to improve health education and raising the mothers' knowledge and awareness.

SUBJECTS AND METHODS

A descriptive study design was carried out in maternal and pediatric hospital in Soran city of Erbil Governorate. The study conducted between the periods of January and May 2018 on a sample of 100 mothers selected by simple random sampling technique (each individual was chosen randomly and entirely by chance, such that each individual had the same probability of being chosen during the sampling process). All participants were informed about the purpose of the study. Verbal consent was taken from participants, and severe sick, mentally handicapped, those with difficulty in communication and mothers who refused participation were excluded from the study. Data were collected using a specially designed questionnaire by the researcher. Participants were interviewed by three trained investigator under the supervision of author, avoiding interpersonal communication on the study and preventing any influence on response from the respondent during the interview period. Questionnaire consists of two parts: Part I related to sociodemographic characteristics (including age, gender, occupation, and education levels) and parity. Part II related to mothers' knowledge of neonatal jaundice (including presentation sites, danger signs, causes, complications, ways of diagnosis, and effective treatments). Categorical responses yes, no, and do not know were applied for the question items. One point awarded for each correct answer and zero for incorrect or do not know. Total knowledge scores for each participant calculated by summation of correct responses with range of 0–22 which divided into three categories of poor knowledge (score ≤6), average knowledge (score 7–13), and good knowledge (score ≥14). The Statistical Package for the Social Sciences (SPSS, version 15) was used to compute frequencies and association of different variables. Chi-square analysis was used to identify any kind of association between different variables in the study. ($P \leq 0.05$ was considered statistically significant).

RESULTS

Sociodemographic Characteristics of the Study Sample

In the present study as shown in Table 1, 36% of mothers were within the age group of 25–30 years old. Majority (84%) of the mothers were of Muslim religion. Regarding education level, highest percentage (31%) of mothers was illiterate followed by 23% and 23% were university/institute and secondary, respectively. In regard to occupation, majority of mothers (76%) were housewife. Results indicate that near to half (49%) of participants were multipara followed by 43% who were primipara as shown in Table 1.

Knowledge of Mothers about Neonatal Jaundice

As it is shown in Table 2, the knowledge of mothers classified into three levels, majority (88%) of them had poor knowledge on neonatal jaundice while only 12% had average level of knowledge.

Table 1: Sociodemographic characteristics of the study sample

Sociodemographic characteristics	Number	%
Age		
<25	17	17
25–30	36	36
31–40	24	24
>40 years	23	23
Religion		
Muslim	84	84
Christians	13	13
Others	3	3
Education level		
Illiterate	31	31
Primary	22	22
Secondary	23	23
University/institute	23	23
Postgraduate	1	1
Occupation		
Student	5	5
Government employee	11	11
Private sector worker	7	7
Retired	1	1
Housewife	76	76
Parity		
0	8	8
Primipara	43	43
Multipara	49	49

Table 2: Distribution of sample by the level of knowledge of neonatal jaundice

Knowledge level	Category score	%
Poor knowledge	≤6	88
Average knowledge	7–13	12
Good knowledge	14–22	0

Results show 58% of mothers known that neonatal skin is presentation site of jaundice followed by half of sample was known sclera. Very limited scores were achieved in dangers of neonatal jaundice, the results show that nobody in the sample had information about arching of the back is danger, and only 4% of them known down rolling of eyes is a one danger.

Mothers' knowledge of the causes of neonatal jaundice was very low and only 13% of the mothers were aware of prematurity. Concerning complication of severe neonatal jaundice, 45% of sample indicated neonatal death, followed by 6%, 5%, and 3% were reported in seizure, brain injury (kernicterus), and mental retardation, respectively. Results show that 41% of mothers indicated to appearance as the best way of diagnosis and more than half of them (56%) knew that phototherapy was a form of the treatment for neonatal jaundice as shown in Table 3.

Results revealed statistically significant association between education level ($\chi^2 = 15.894$, $P = 0.003$), occupation ($\chi^2 = 13.478$, $P = 0.019$), and knowledge levels of mothers on neonatal jaundice. Findings of the study show no significant association between knowledge levels with age ($\chi^2 = 1.633$, $P = 0.656$), religion ($\chi^2 = 2.051$, $P = 0.355$), and parity ($\chi^2 = 1.249$, $P = 0.536$) as shown in Table 4.

Table 3: Knowledge of mothers about neonatal jaundice

Items	%
Presentation sites of neonatal jaundice	
Sclera	50
Palm and sole of foot	12
Neonate skin	58
Danger signs of neonatal jaundice	
Refusal to feed	16
High pitched cry	12
Arching of the back	0
Down rolling of eyes	4
Fever	28
Seizure	9
Causes of neonatal jaundice	
Blood group incompatibility	2
Infection in blood (septicemia)	3
Prematurity (low birth weight)	13
Complication of severe neonatal jaundice	
Neonatal death	45
Brain injury (kernicterus)	5
Mental retardation	3
Seizure in future	6
The best way of diagnosis neonatal jaundice	
Urine analysis	9
Blood analysis	19
Appearance	41
Effective treatment	
Phototherapy	56
Blood exchange in severe cases	7
Use of drugs	35

*Multiple responses

DISCUSSION

The present study revealed that more than half of mothers indicated skin and sclera as presentation sites of neonatal jaundice. Similar findings were also reported by Adeeb et al., 2016; Alemu et al., 2011; and Khalesi and Rakhshani, 2008. The finding in this study revealed that majority of mothers were unaware of danger signs of neonatal jaundice; however, 28% of respondents indicated fever and 16% opined refusal to feed while nobody in the sample had information about arching of the back as danger. These results agree with those of a study done in Iran, in which mothers selected refusal of feed and fever as danger signs (Khalesi and Rakhshani, 2008) while another study on knowledge of mothers in immunization clinic at a tertiary care hospital of Lucknow, India, by Shukla and Agarwal (2016) discovered the rate of 51% for refusing of feed, 68.7% for fever, and 32% high pitched cry.

Results show poor knowledge of the causes of neonatal jaundice among participants, similar findings revealed in a study in Nigeria by Opara et al. (2014). In contrast to these findings, in a study in India, about half of mothers answer prematurity as the major cause of neonatal jaundice by Shukla and Agarwal (2016). The present study shown that 45% of mothers expected neonatal death as result of severs neonatal jaundice, while the rate was 6% for seizure, 5% brain injury (kernicterus), and 3% for mental retardation.

Concerning the complications, the present study was in agreement with findings of Shukla and Agarwal, 2016; Aggarwal et al., 2017; and Egube et al., 2013, while quite a different finding was noticed in a study of Khalesi and Rakhshani (2008) carried out in Iran.

In terms of diagnosis, findings of the present study demonstrated that less than half of mothers answered appearance, and one-fifth indicated blood analysis as a method of diagnosis jaundice. In the present study, phototherapy and use of drugs, respectively, were reported by 56% and 35% as effective treatment for neonatal jaundice. Similar finding was reported by Huq et al., 2017, in Dhaka city, and with studies of Ahmed and Hani, 2017; Allahony et al., 2016; and Egube et al., 2013.

Number of studies carried out in different places such as Adebami, 2015, in Nigeria; Aggarwal et al., 2017, in India; Onyearugha et al., 2016, in Nigeria; and Dash, 2013, in India, all together consistence with low level of knowledge

Table 4: Sociodemographic characteristics of respondents and their knowledge of NN jaundice

Variable	Knowledge level				Chi-square(χ^2)	p
	Poor knowledge		Average knowledge			
	N	%	N	%		
Age					1.663	0.656
<25	16	94.1	1	5.9		
25–30	31	86.1	5	13.9		
31–40	22	91.7	2	8.3		
>40 years	19	82.6	4	17.4		
Religion						
Muslim	75	89.3	9	10.7	2.051	0.355
Christians	10	76.9	3	23.1		
Others	3	100	0	0		
Education level						
Illiterate	28	90.3	3	9.7	15.894	0.003
Primary	21	95.5	1	4.5		
Secondary	23	100	0	0		
University/institute	15	65.2	8	34.8		
Postgraduate	1	100	0	0		
Occupation						
Student	5	100	0	0	13.478	0.019
Government employee	8	72.7	3	27.3		
Private sector worker	5	71.4	2	28.6		
Retired	0	0	1	100		
Housewife	70	92.1	6	7.9		
Parity						
0	8	100	0	0	1.249	0.536
Primipara	37	86	6	14		
Multipara	43	87.8	6	12.2		

regarding effective treatment of neonatal jaundice among respondents.

The present study revealed that majority (88%) of participants had poor knowledge level regarding neonatal jaundice, especially in domains of causes and danger signs, and poor knowledge may adversely affect the mother actions and cause increase related morbidity and mortality. Our findings revealed that there was no association between mothers' knowledge level and age, agreed with the study of Aggarwal et al., 2017, and in contrast with studies of Mohini and Shetty, 2017; Ahmed and Hani, 2017; and Hussein and Aziz, 2016.

There was no association between religion and mothers' level of knowledge unlike the study of Aggarwal et al. (2017). The present study revealed that education level and occupation status significantly affected on scores of knowledge. These findings supported by the results of Mohini and Shetty, 2017, and Ogunlesi and Abdul, 2015, in Nigeria.

CONCLUSION

Based on the finding of the present study, it can be concluded that knowledge of neonatal jaundice among mothers was very low. The study revealed that lack of knowledge was significantly associated with educational level and occupation status of respondents. The study recommended that awareness and educational programs should be incorporated into serving the health services during antenatal visits and at the community level on all aspects of neonatal jaundice as well as further training courses, confirmation of the skills for health-care providers, and updating their knowledge and teaching methods.

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