Assessment of Mothers' Knowledge and Beliefs toward Care of Neonatal Jaundice in Pediatric Teaching Hospital in Holy Karbala City

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Abstract- A descriptive study was conducted in Pediatric Teaching Hospital in holy Karbala city, from the 1st of December 2015 to the mid of August 2016. Aims at: To assess mothers' knowledge and beliefs toward care of neonatal jaundice, to identify the relationship between mothers' knowledge and beliefs with their demographic variables such as mothers' age, level of education, occupations, socioeconomic status and to identify the relationship between mothers' knowledge with their beliefs toward care of neonatal jaundice.

Methodology: Non - probability (purposive) sampling of (100) mothers accompanied their neonates due to jaundice and they were attending hospital for management during the period of data collection. The data were collected by investigator who interviewed mothers and filled out the constructed questionnaire formats which constructed for the purpose of this study. The questionnaire consisted of three parts: The first part is dealing with demographic characteristics of the mothers and their newborns, the second part is dealing with mothers' knowledge toward care of neonatal jaundice and the third part is dealing with mothers' beliefs toward care of neonatal jaundice, the total items of the questionnaire were (76) items, reliability of the questionnaire was determined through internal consistency, content validity of the questionnaire was determined through panel of experts. Data were analyzed by using Statistical package of Social Science and descriptive statistical approach frequencies and percent and Inferential statistical approach.

Results: The findings revealed that knowledge of mothers related to neonatal jaundice were low (34%).While that beliefs of mothers related to neonatal jaundice were high (78%). Also revealed that there is a significant relationship between mothers' knowledge and their demographic characteristics(age ,level of education and socioeconomic status , neonate's age, neonate's ordinal position family and baby affected in one family).There is a significant relationship between mothers beliefs and their demographic characteristics (age ,level of education, socioeconomic status, residential area , baby affected in one family and duration of the disease). There is a high significant relationship between mothers knowledge and their beliefs .

Recommendation: The study recommended to provide mothers health education about care of neonatal jaundice in order to improving the knowledge and attitudes of mothers.

Index Terms- Mothers' Knowledge, Mothers Beliefs, Neonatal Jaundice.

I.   INTRODUCTION

The neonatal (newborn) period define as the time of birth up to 28th day of life. It is the most critical time for the survival of an infant [(1)]. Approximately 60% of term and 80% of preterm newborns during the first week suffered from most common and important conditions needing medical attention in neonates called jaundice, or icterus, and about 10% of breastfed babies are still jaundiced at 1 month (NICE ,2014;Kliegman et al.,2016).It is a common disorder worldwide and estimated for 75% of hospital re-admissions [(2)]. If the rate of bilirubin production exceeds the rate of its elimination, the end result is an increase in total serum bilirubin this clinical condition called jaundice or hyperbilirubinaemia (Davidson 2014). In neonates jaundice can be clinically observed at blood concentration of 5mg/dl or greater. Cephalocaudal progression of yellowish staining associated with increasing levels of serum bilirubin, it is first noted in the face and as the bilirubin rising level extends to trunk and then to the extremities [(3)]. For most newborns, jaundice is not an indication of an underlying disease, and it is termed 'physiological jaundice 'that is generally harmless. But sometimes jaundice can indicate underlying disease such as liver disease or serious metabolic abnormalities this termed ' pathological jaundice' which may cause irreversible brain damage and need urgent intervention to prevent this permanent irreversible organ damage. If jaundice is early detection and effective therapy started soon, chronic morbidity and neonatal mortality are preventable [(4) (5)]. The response of mothers about jaundice in their babies depend on the mothers' knowledge what jaundice is and what innate risk it could cause complication if not appropriately treated in their newborns [(6)]. Lack of enough information or wrong information and beliefs passed along the years to mothers may possibly explain delayed to seek medical advice immediately [(7)]. Even though recognition of NNJ by mothers and relatives at home cannot be expected to be as quick as in the hospitals. Decision to seek care at household level and subsequent late intervention at healthcare facilities will be affected by the knowledge and believes of the mothers toward NNJ [(8)].

II.   METHODOLOGY

Objectives of the study
1. Assess mothers' knowledge toward care of neonatal jaundice.

2. Assess mothers' beliefs toward care of neonatal jaundice.
3. Identify the relationship between mothers' knowledge and mothers' beliefs with their demographic variables such as mothers' age, level of education, occupations and socioeconomic status.

Design of the study: The study was a descriptive (cross sectional research design) which performed on mothers having neonate with jaundice ,starting from the 1st of December 2015 to the mid of August 2016, in order to assess the knowledge and beliefs of mothers toward care of neonatal jaundice.

Setting of the Study: The study was conducted in Pediatric Teaching Hospital in holy Karbala city. This hospital treated large numbers of children because this the main hospital and the only one in Holy Karbala City. Data collection during period 10April to 10 June 2016 after permission obtained from the hospital.

Sample of the Study: Non- probability (purposive) sampling method was used to select (100) mothers accompanied their neonates due to jaundice and they were attending hospital for management during the study.

Method of Data Collection: Data were obtained by researcher who contacted mothers and informed of the purpose of the study, those who gave consent to participation had direct interviewed to assess the knowledge and beliefs toward neonatal jaundice ,the investigator were filling the structured questionnaire form which developed for this study. All information given by the mothers were kept confidential and they were used merely for the purpose of this study. An average, each interview was taken from 25 to 35 minutes.

Study instrument: A questionnaire consisted of three parts and covering sheet that included statements to introduce the investigator and the purpose of the study which includes the followings parts:

Part 1: Demographic characteristics which includes:

1. Demographic characteristics of mothers
2. Demographic characteristics of mothers

Part 2: Mothers' Knowledge toward Care of Neonatal Jaundice: Which consist of (60) items divided into (8) main sections and comprises the general concepts about neonatal jaundice (8) items , causes of neonatal jaundice (7) items, dangerous factors that develop to sever jaundice (4) items , signs and symptoms of neonatal jaundice (9) items , complications of sever jaundice in newborn (6) items , danger signs of neonatal jaundice (4) items , diagnostic tests of neonatal jaundice (4) items , treatment of neonatal jaundice (4) items. The questionnaire was rated according to (3) points – likert scale as (know , uncertain , don't now) . the level were scored as (3) for know , (2) for uncertain , and (1) for don't now to measuring mean of score.

Part 3: Mothers' Beliefs toward Care of Neonatal Jaundice It was concerned with the beliefs on care of neonatal jaundice among mothers which consisted of (16) items to determine the beliefs that mother have in regard to the disease , data were analyzed according to three points – likert scale as (1) for belief , (2) for uncertain , (3) for don't belief.

Validity and Reliability: The content validity of the instrument was established through a panel of (22) experts, the reliability of the items were based on the internal consistency of the questionnaire was assessed by calculating Cronbach s' Alpha which as= 0.89 and 0.82 for mothers knowledge and mothers belief respectively.

Statistical analysis: The statistical data analysis approach by using (SPSS-ver.20) is used in order to analyze the data of the study. A descriptive statistical data analysis approach used to describe the study variables : Frequencies, percentages, standard deviation and mean of score; and inferential statistical data analysis approach: used by application of the Chi-square test.

III. RESULTS

Table (1): Distribution of Mothers by their Demographic Characteristics

No.	Characteristics	variables	Mother	
			F	%
1	Mothers' age (years)	16 – 20	7	7
		21 – 25	9	9
		26 – 30	30	30
		31 – 35	24	24
		36 – 40	8	8
		41 - 45	22	22
		Total	100	100
2	Level of education	Illiterate	15	15
		Read & write	8	8
		Primary school graduate	22	22
		Intermediate school graduate	31	31

		secondary school graduate	7	7
		institute graduates	9	9
		College graduate	8	8
		Total	100	100
3	Occupational	House wife	80	80
		Employee	20	20
		Total	100	100
4	Socioeconomic status	Low ($\leq$ 5-10)	60	60
		Middle (11-25)	32	32
		High (26- 29)	8	8
		Total	100	100
5	Residential area	Rural	35	35
		urban	65	65
		Total	100	100

No: Number, F: Frequency, % Percentage

This table shows that the (30%) of the study sample are within third age group (26 – 30) years old. concerning education, results indicate that the (31%) of the mothers are intermediate school graduate. Regarding occupation, (80%) of the mothers are housewife. In addition, most of the mothers (60%) are making low socioeconomic status. Finally in this table, the study results indicate that the most of the mothers (65%) living in urban areas.

Table(2): Distribution of Neonates by their Demographic Characteristics

No.	Characteristics	variables	F	%
1	Neonate's age (Days)	1 – 7	83	83
		8 – 14	14	14
		15 – 21	2	2
		22 – 28	1	1
		Total	100	100
2	Neonate's gender	Male	68	68
		Female	32	32
		Total	100	100
3	Neonate's ordinal position in family with Jaundice	First	40	40
		Second	25	25
		Third	15	15
		Fourth	9	9
		Fifth and above	11	11
		Total	100	100
4	Neonate's feed methods	Breast feeding	90	90
		Artificial feeding	2	2
		Mixed feeding	8	8
		Total	100	100
5	Previous history with	No previous sibling with jaundice	60	60

	NNJ in one family.	Previous sibling with jaundice	40	40
		Total	100	100
6	Neonate's age at onset of jaundice (Days).	First day of life	6	6
		Second to seventh day life	90	90
		After seventh day life	4	4
		Total	100	100
7	Duration of the disease (Days)	1-7 days	90	90
		Above 7 days	10	10
		Total	100	100

No: Number, F: Frequency, % Percentage

This shows that the (83%) of neonate within first age group (1-7) days old. Concerning gender, study results indicate that the most of the sample (68%) is male neonate. Regarding neonate's ordinal position in family with Jaundice, the study results indicate (40%) first neonate ordinal with jaundice. Concerning methods of neonate feeding, results indicate that the (90%) of the neonate making breast feeding. In addition, (60%) of the neonates no previous sibling with jaundice. Concerning onset of jaundice, the study results reveals (90%) second to seventh day age that onset jaundice. Finally, the study results indicate that the (90%) of the study sample are (1-7) days duration of the disease (jaundice).

Table (3):The Overall Mothers' knowledge towards Care of Neonatal Jaundice

Mothers' knowledge towards Care of Neonatal Jaundice	Mothers' response	F	%	M.S.	S.D	Report
	Don't know	59	59			
	Uncertain	7	7	1.75	0.93	Fail
	Know	34	34			

F= Frequency, %= Percentage, Cut Off Point,, M.S.= Mean "Pass (mean of score equal or more than 2), fail (mean of score less than 2)", S.D= Stander Deviation.

This shows that the majority of mothers responses about knowledge towards care of neonatal jaundice are fail according to mean of scores, (59%) of mothers have don't know responses about knowledge towards care of neonatal jaundice.

Table (4): The Overall Mothers' Beliefs towards Care of Neonatal Jaundice

Mothers Beliefs towards Care of Neonatal Jaundice	Mothers' response	F	%	M.S.	S.D	Report
	Believed	78	78			
	Uncertain	5	5	1.39	0.76	Believed
	Don't believed	17	17			

F= Frequency, %= Percentage, Cut Off Point, M.S.= Mean of Score "Believed (mean of score 1-1.66), Uncertain (mean of score 1.67-2.33), Don't believed (mean of score 2.34 and more). S.D= Stander Deviation.

This table shows that the majority of mothers' responses are believed towards care of neonatal jaundice according to mean of scores ,(78%) of mothers have believed responses towards care of neonatal jaundice.

Table (5): Association between Mothers' knowledge with Their Demographic Characteristics

Demographic data of Mothers	variables	Mothers' knowledge			χ^2	d.f	p- value
		don't know	Uncertain	Know			
Mothers' age (years)	16 – 20	3	0	4	55.56	10	0.00 H.S
	21 – 25	2	4	3			
	26 – 30	13	0	17			
	31 – 35	24	0	0			
	36 – 40	8	0	0			
	41 - 45	9	3	10			
Level of education	Illiterate	14	0	1	49.84	12	0.000 H.S
	Read & write	6	0	2			
	Primary school graduate	16	1	5			
	Intermediate school graduate	21	5	5			
	secondary school graduate	1	0	6			
	institute graduates	1	1	7			
	College graduate	0	0	8			
Occupational	House wife	44	7	29	3.43	2	0.180 N.S
	Employee	15	0	5			
Socioeconomic status	Low	48	7	5	47.28	4	0.00 H.S
	middle	7	0	25			
	high	4	0	4			

χ^2 = Chi-square, d.f.= Degree of freedom, P-value= Probability value, H.S=High significant, S= Significant, N.S= No Significant

Table indicates that there are high significant association between the mothers knowledge and their age , level of education and socioeconomic status at p-value < 0.05; while no significant relationship are reported in occupational and residential of mothers at p-value < 0.05.

Table (6): Association between Mothers' Beliefs with their Demographic Characteristics

Demographic data of Mothers	variables	Mothers' Beliefs			χ^2	d.f	p-value
		Believed	uncertain	Don't Believed			
Mothers' age (years)	16 – 20	7	0	0	44.85	10	0.000 H.S
	21 – 25	7	0	2			
	26 – 30	16	0	14			
	31 – 35	19	5	0			
	36 – 40	7	0	1			
	41 - 45	22	0	0			
Level of education	Illiterate	15	0	0	66.85	12	0.000 H.S
	Read & write	8	0	0			
	Primary school graduate	22	0	0			
	Intermediate school graduate	21	5	5			
	secondary school graduate	7	0	0			
	institute graduates	5	0	4			
	College graduate	0	0	8			

Occupational	House wife	69	5	6	1.532	2	0.465 N.S
	Employee	19	0	1			
Socioeconomic status	Low	43	2	15	13.724	4	0.008 S
	middle	29	1	2			
	High	6	2	0			
Residential area	Rural	35	0	0	25.339	2	0.000 H.S
	urban	33	5	27			

χ^2 = Chi-square, d.f.= Degree of freedom, P-value= Probability value , H.S=High significant ,S= Significant, N.S= No Significant

Table indicates that there are high significant relationships between the overall mothers beliefs and their age ,level of education and residential area of mothers at p-value< 0.05; while significant relationship is reported with the socioeconomic status of mothers at p-value < 0.05.

Table (7): Association between Mothers' knowledge with their Beliefs

Demographic data	Rating	Believes				χ^2	d.f	p-value
		Believed	Uncertain	Don't Believed	Total			
Knowledge	Don't know	58	0	1	59	47.542	4	0.000 H.S
	Uncertain	7	0	0	7			
	Know	13	5	16	34			
	Total	78	5	17	100			

χ^2 = Chi-square, df= Degree of freedom, P-value= Probability value , H.S=High significant ,S= Significant, N.S= No Significant.

Table presents that there is a high significant association between the overall mothers knowledge and mothers beliefs at p-value < 0.05. The study indicates that (59%) of the mothers didn't know responses about NNJ, (58%) of them have believed responses. while the mothers with known responses account (34%), (13%) of them have believed responses about NNJ.

IV. DISCUSSION

Part (I): Discussion of the demographic characteristics
1. Discussion of Mother Demographic Characteristics

Study results reveals that the (30%) of the study sample are within third age group (26 – 30) years old. This results come with the study of Ekwochi et al.,(2015) have studied Neonatal Jaundice. Perception and Care Seeking Behaviors among Mothers/ Caregivers in a Developing Setting , Nigeria. Their results indicate that the most of mothers(42.3%) within age group (26-30) years old. Robinson et al., (2008) mentioned in their study that maternal age between 25-35 years is one of minor risk factors for development of Hyperbilirubinaemia in neonates [9] [10].

Concerning education, results indicate that the (31%) of the mothers are intermediate school graduate. This results agrees with the study of AL-Shamsi et al.,(2010) have studied a descriptive study to assess non-medical treatment of neonatal jaundice in Qadisieh , And findings indicate that the (83%) of mothers were educated up to intermediate school graduate. Regarding occupation,(80%) of the mothers in current study are housewife. This result is approximately similar to the study of Soheila et al.,(2014) have studied knowledge and attitude of postnatal mothers on neonatal jaundice in Motahari hospital, Iran. Their results indicate that the most of mothers (79.5%)were housewives. Also results come with the study of Yeshi (2015) has assessed mothers knowledge and attitudes of them. Their findings indicate that the most of the mothers (30.2%) are housewife. In addition, most of the mothers (60%) are low socioeconomic status. This results agree with Ekwochi et al., (2015) who indicated that over half (51.9%) of the surveyed mothers were in the low socio-economic class. Finally, the study results indicate that the most of the mothers (65%) living in urban areas. A study of Abadit et al.,(2016) have assessed of knowledge and practice of neonatal care among post natal mothers attending in Ayder and Mekelle hospital in Ethiopia, a cross sectional study design is conducted on (290) participants, interviewed with structured questionnaire, the findings indicate that the (53%) of mothers within age group (25-29) years old, most of the mothers (78.62%) are residence in urban areas. This agree with the present study [11] [12] [9] [13] [24].

Discussion of Neonatal Demographic Characteristics

Results shows that the (83%) of neonate within first age group (1-7) days old. This is similar to previous findings, Adebami (2015) who have studied appraisal of maternal knowledge of neonatal jaundice in Ilesa, southwestern Nigeria , and also found (54.1%) of babies aged (1-7) days. While the results of current study disagrees with Yaqub et al.,(2016) who found majority of neonates (46.5%) were aged between 6 and 10 days. Concerning gender, study results indicate that the most of the sample (68%) is male neonate. This results agree with Yahya et al.,(2013) who have studied incidence and risk factors of hyperbilirubinemia in neonatal in Mosul City and indicated that (66%) were male neonates while(34%) were female. Regarding neonate's ordinal position in family with jaundice, the study results indicate (40%) first neonate ordinal with jaundice. This results agrees with Vikram et al.,(2012) who have studied cord blood bilirubin level as an early predictor of neonatal hyperbilirubinemia, they found that most of the newborns (44.2%) were first in birth order. Concerning methods of neonate feeding, results indicate that the (90%) of the neonate making breast feeding. This results agrees with Yahya,(2013) who found in there study that breast feeding was identified in (88%) and (72.53%) of cases respectively. In addition, (60%) of the neonates not affected by previous sibling with jaundice. This results disagree with the study of Yaqub et al.,(2016) reported in there study that (74.5%) mothers with history of having previous babies with jaundice. Concerning onset of jaundice, the study results reveals (90%) second to seventh day age that onset jaundice. Kolawole, (2016) who have studied Prevalence of neonatal jaundice in Eku Baptist community hospital in Nigeria ,also found in his study that (70.5%) of the neonates developed jaundice within the first week of life. Finally, the study results indicate that the (90%) of the study sample are (1-7) days duration of the disease (jaundice).This results are disagree with the study of Sura et al., (2008) who have studied neonatal jaundice in Mosul ,the result of their study was the largest proportion (94%) of neonates in whom jaundice disappears within 10 days [5] [15] [16] [17] [18] [15] [19].

Part (II): Discussion of the Mothers' knowledge towards Care of Neonatal Jaundice:

The majority of mothers responses about knowledge towards care of NNJ are fail according to mean of scores, these responses were (59%) had didn't know, (34%). Knew and (7%) uncertain. This results are consistent with the study of Goodman et al.,(2015) who found in the study that (68.9%) of the mothers had a poor level of knowledge. And so Rahimi et al.,(2014) found in there study that (50%) of the mothers had poor knowledge and (16.7%) of them had good knowledge about NNJ [20] [21].

Part (III): Discussion of the Mothers' Beliefs towards Care of Neonatal Jaundice

Results revealed that most mothers' responses about beliefs towards care of NNJ are believed according to mean of scores, these responses were (78%) had believed, (17%) didn't believed and (5%)Uncertain. Dash (2013) reported (30%) of mothers had positive attitude towards the management of NNJ. Mothers' misconceptions about NNJ lead to a long delay after jaundice appears and before the first visit of a doctor and may cause some side effects on the baby (Soheila et al.,2014). Delay in seeking care promptly for NNJ, as a major contributor to adverse neurological disorders, this shows the importance of time in management of NNJ (Olusanya et al.,2014). Khalesi and Rakhshani ,(2008)show that many complications of NNJ have occurred because of lack of attention, self-treatment and also other beliefs as use of inappropriate medicine, fluorescent light or avoiding some foods as dates and raisin are prevalent. However, none of these has an acceptable effect [22] [12] [8] [23].

Part (IV): Discussion of the Association between Mothers' knowledge and their Beliefs

Results indicate that there is a high significant association mothers' knowledge and their beliefs at P<0.05. The study indicates that (59%) of the mothers have wrong answers about NNJ, (58%) of them have believed responses, and (1%) of them have don't believed responses about wrong beliefs of NNJ. While the mothers with correct answers account (34%), (13%) of them have believed responses , and (16%) of them have don't believed responses about wrong beliefs of NNJ. This results agree Khalesi and Rakhshani ,(2008) had assessed knowledge, attitude and behavior of mothers on neonatal jaundice. Their findings indicate that it was not sufficient knowledge about causes, complications, harmful symptoms and prevention of NNJ, and found direct correlation between knowledge, attitude and behavior (P<0.001) [23].

V. CONCLUSION

1. It is found that the most of sample are young mother within age group (26-30 years old) and most of them, Intermediate school graduate, which most of them a housewife and most of the mothers (65%) living in urban areas.
2. The most (53% and 50%) of mothers got information concerning neonatal jaundice from doctors and nurses respectively.
3. The mothers knowledge towards care of neonatal jaundice is fail due to lack of educational programs or mothers perceptions concerning jaundice disease.

The mothers beliefs towards care of neonatal jaundice is believed responses as (negative beliefs).

The mothers knowledge in term of knowledge about general concepts, signs and symptoms and treatment of neonatal jaundice, mothers are good responses (pass).

Mothers' knowledge significantly association with their age, level of education, socioeconomic status, neonate's age, neonate's ordinal position in family and baby affected neonatal jaundice in one family.

Mothers' beliefs significantly association their age , level of education , residential area, socioeconomic status, baby affected neonatal jaundice in one family and duration of the disease.

VI. RECOMMENDATION

1. Education to the mothers should be routinely offered during antenatal visits and postnatal.
2. Targeted public enlightenment program and education should be done to improve the level of awareness and attitude on infant health and newborn jaundice.
3. Nurses should advise mothers to promotion and support for successful breastfeeding when their newborns develop jaundice.
4. Training courses for all staff that work in pediatrics wards in relation to mothers health education towards child care in general and especially about children with jaundice health care program.
5. The mass media should be encouraged to play important role for disseminate more information on neonatal jaundice.
6. Future studies can be conducted to involve a national level and make instructional program for mothers towards their beliefs about jaundice diseases.
7. Further studies should be made to identify the factors that affect mothers knowledge and beliefs towards jaundice diseases.

Comparative study that can be conducted to evaluate mothers beliefs between urban and rural areas.

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