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# Knowledge, Attitude and Practice of Mothers to Neonatal Jaundice

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## Abstract

**Background:** Neonatal severe hyperbilirubinemia represents a significant, yet preventable health problem, particularly in low- and middle-income countries (LMICs) [16]. Adequate maternal knowledge, early perception, and care seeking behavior are fundamental components of effective management of NNJ [7]. A number of studies revealed unexpected moderate knowledge and attitude scores of mothers in most knowledge domains, although the majority of them were illiterate or had low educational attainment.

**Aim of the study**: To assess the knowledge, attitude and practice responses of women during reproductive age toward neonatal jaundice and response correlation to demographic characteristics.

**Patients and Method:** In this hospital based study, in order to evaluate the knowledge background of ladies of reproductive age toward neonatal jaundice regarding causes, clinical manifestation, complications, mode of treatment and other aspects in addition to their attitude regarding conventional and traditional medical approaches and how to behave when facing the problem of neonatal jaundice, a sample of women was selected according to the duration of study.

**Results:** Most of women admit to know 2 symptoms of jaundice, where as small proportion of women knew only one symptom of jaundice, 80.2 % versus 15.8 %, respectively. Four women (4%) know none of symptoms of jaundice. Regarding dangerous symptoms of jaundice, most of women (88.1 %) knew a single symptom and a few of them (4 %) knew 3 symptoms. Positive attitude toward neonatal was seen in significantly high proportion of women enrolled in the study. Positive practice was correlated to older age, higher level of education and higher birth order

**Conclusion:** Knowledge, attitude and behavior of women about various aspects of neonatal jaundice were significantly better in older women in comparison with younger women, and highly significant better with increasing birth order, as well as it was significantly better in employee and with higher level of education.

***Key words:*** *Knowledge, Attitude and Practice, Mothers, Neonatal Jaundice.*

## Introduction

Neonatal jaundice is yellowish discoloration of the skin, conjunctiva and the sclera from elevated serum or plasma bilirubin in the newborn period [12]. The term jaundice is from the French word "jaune," which means yellow [24]. Neonatal jaundice in most newborns is a mild and transient event. It is however imperative to identify newborns with jaundice that do not follow this pattern as failure to do so may lead to long-term sequelae [21]. Almost all newborns will develop a total bilirubin level above the upper limit of normal for adults and older children bilirubin of 1.5 mg/dl with less than 5% of the total bilirubin conjugated [3]. Up to 60% of term infants and 80% of newborns with a gestational age of 35 weeks or more will develop jaundice, which occurs when serum bilirubin reaches and exceeds 5 mg/dl [10]. Neonatal severe hyperbilirubinemia represents a significant, yet preventable health problem, particularly in low- and middle-income countries (LMICs) [16]. Adequate maternal knowledge, early perception, and

care seeking behavior are fundamental components of effective management of NNJ [7]. A number of studies revealed unexpected moderate knowledge and attitude scores of mothers in most knowledge domains, although the majority of them were illiterate or had low educational attainment. This may be partly associated with successful implementation of extensive primary care network, as well as frequent broadcasting free health messages [13] . In terms of knowledge, some studies reported that participants had adequate knowledge about NNJ in the aspects of awareness, risk factors, management, and complications. Nonetheless, only little proportion of mothers had addressed breast feeding and preterm labor as risk factors for NNJ, respectively. This warrants adequate antenatal and postnatal dissemination of information on neonatal hyperbilirubinemia to the vast majority of mothers. Generally, frequency of correct responses of knowledge related to NNJ was inconsistent across studies conducted in developing world such as Ethiopia (63.5%) [1], Nigeria (57%) [15], Iran (77%) [2], and Turkey (46%) [23]. Utilization of different questionnaires, cultural diversity, and traditional beliefs could be factors that might have influenced such difference. Therfore the aim of the currents study was to assess the knowledge, attitude and practice responses of women during reproductive age toward neonatal jaundice and response correlation to demographic characteristics.

## Patients and Method

In this hospital based study, in order to evaluate the knowledge background of ladies of reproductive age toward neonatal jaundice regarding causes, clinical manifestation, complications, mode of treatment and other aspects in addition to their attitude regarding conventional and traditional medical approaches and how to behave when facing the problem of neonatal jaundice, a sample of women was selected according to the duration of study. The available conventional sample was collected as 2 to 3 cases per day, 3 days a week. At the end of the study we were able to collect information about 101 women. The study was carried out in the Al-Diwanyal Maternity and Child Teaching hospital during the period from October 2018 through January 2016. The following variables were included in the questionnaire form: Demographic characteristics including age, residency, education level and occupation, Mode of delivery and birth order of last child. Knowledge domain included Symptoms of jaundice, Dangerous symptoms of jaundice, Causes of neonatal jaundice, Effective treatment, Complication of severe jaundice, Best way of diagnosis and Prevention during pregnancy. Attitude domain was evaluated through a number of questions regarding Neonatal jaundice development, traditional medicine harmful effect, worry of hospitalization, visiting physician when facing the problem of neonatal jaundice. Practice domain included direct questions with yes or no response. These questions were about Using medical herbs, Fluorescent use at home, Using sun light, Referring to physician and Referring to traditional healers. The study was approved by the institutional ethical approval committee and formal agreement was obtained from the directorate of Health in Al-Diwaniyah province, the formal representative of Iraqi Ministry of health.

Data were collected and transformed into a spread sheet of Microsoft Office Excel 2010 and then into an SPSS (statistical package for social sciences) version 23. Numeric quantitative data were expressed as mean, range and standard deviation (SD), whereas, qualitative data were expressed as number and percentage. Spearman correlation test was used to assess correlation among variables. The level of significance was considered at $P \leq 0.05$.

## Results

Demographic characteristics of women enrolled in the present study were demonstrated in table 1. The frequency distribution of women according to knowledge domain is demonstrated in table 2. Most of women admit to know 2 symptoms of jaundice, where as small proportion of women knew only one symptom of jaundice, 80.2 % versus 15.8 %, respectively. Four women (4%) know none of symptoms of jaundice. Regarding dangerous symptoms of jaundice, most of women (88.1 %) knew a single symptom and a few of them (4 %) knew 3 symptoms. With respect to causes of jaundice, most women revealed knowledge of a single cause of jaundice and they accounted for 59.4 %, only 20.8 % of women knew 2 causes and 19.8 % of women were unable to recognize any cause of jaundice. Most of women (60.4 %) knew a single effective mode of therapy and 19.8 % of them new two modes, whereas 19.8 % of them know none of effective treatment modes. The largest proportion of participating women knew nothing about complications of neonatal jaundice and they accounted for 44.6 %. Those who know 1, 2 or three complications accounted for 11.9 %, 23.8 and 19.8 %, respectively. Most of participating women had knowledge about 2 methods of diagnosis and they

accounted for 96.0 %, while 4% of them knew only a single diagnostic method. Unfortunately all participating women know nothing about how to prevent neonatal jaundice during pregnancy. Assessment of women Attitude domain toward neonatal jaundice and their frequency distribution according to response to attitude questions are shown in table 3. Regarding the first question " I am worried about developing jaundice in may infant" 72.3 % of the response was strongly agree, 15.8 % of the response was "no idea" and 11.9 % of the response was disagree. Regarding the second question "I am worried about several blood testing of my infant because it can cause anemia" 100.0 % of the response was disagree. Regarding the third question "if jaundice develops in my infant, I shall use traditional medicine because this disease is not dangerous", 92.1 % of the response was disagree and 7.9 % was "no idea". Regarding the fourth question "if jaundice develops in my infant, I won't use traditional medicine because it may be harmful for him", 96.0 % of the response was disagree and 4.0 % was "no idea". Regarding the fifth question "if jaundice develops, since I am afraid of hospitalization, I won't consult a physician", 84.2 % of the response was disagree, 7.9% was strongly disagree, 4.0 % was "no idea" and 4.0 % was strongly agree. Regarding the sixth question "Neonatal jaundice is a serious condition", 64.4 % of the response was strongly agree, 19.8 % was "no idea" and 15.8 % was disagree. Regarding the seventh question "early referring to the physician and getting proper treatment, neonatal jaundice is curable", 84.2 % of the response was strongly agree, 11.9 % was "no idea" and 4.0 % was disagree.

**Table 1: Frequency distribution of women according to response to knowledge domain questions**

| Knowledge domain response | n | % |
|---|---|---|
| Symptoms of jaundice | | |
| 0 | 4 | 4.0 |
| 1 | 16 | 15.8 |
| 2 | 81 | 80.2 |
| Dangerous symptoms of jaundice | | |
| 0 | 8 | 7.9 |
| 1 | 89 | 88.1 |
| 3 | 4 | 4.0 |
| Causes of neonatal jaundice | | |
| 0 | 20 | 19.8 |
| 1 | 60 | 59.4 |
| 2 | 21 | 20.8 |
| Effective treatment | | |
| 0 | 20 | 19.8 |
| 1 | 61 | 60.4 |
| 2 | 20 | 19.8 |
| Complication of severe jaundice | | |
| 0 | 45 | 44.6 |
| 1 | 12 | 11.9 |
| 2 | 24 | 23.8 |
| 3 | 20 | 19.8 |
| Best way of diagnosis | | |
| 1 | 4 | 4.0 |
| 2 | 97 | 96.0 |
| Prevention during pregnancy | | |
| 0 | 101 | 100.0 |

**Table 2: Frequency distribution of women according to response to attitude domain questions**

| Question | Strongly agree | | Agree | | No idea | | Disagree | | Strongly disagree | |
|---|---|---|---|---|---|---|---|---|---|---|
| | n | % | n | % | n | % | n | % | n | % |
| Q1 | 73 | 72.3 | 0 | 0.0 | 16 | 15.8 | 12 | 11.9 | 0 | 0.0 |
| Q2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 101 | 100.0 | 0 | 0.0 |
| Q3 | 0 | 0.0 | 0 | 0.0 | 8 | 7.9 | 93 | 92.1 | 0 | 0.0 |
| Q4 | 0 | 0.0 | 0 | 0.0 | 4 | 4.0 | 97 | 96.0 | 0 | 0.0 |
| Q5 | 4 | 4.0 | 0 | 0.0 | 4 | 4.0 | 85 | 84.2 | 8 | 7.9 |
| Q6 | 65 | 64.4 | 0 | 0.0 | 20 | 19.8 | 16 | 15.8 | 0 | 0.0 |
| Q7 | 85 | 84.2 | 0 | 0.0 | 12 | 11.9 | 4 | 4.0 | 0 | 0.0 |

The evaluation of practice domain is shown in table 4 and the frequency of women to questions related to this domain was outlined. Regarding the first question "Using medical herbs", yes response accounted for 84.2 %, whereas, no response accounted for 15.8 %. Regarding the second question "Fluorescent use at home", yes response accounted for 88.1 %, whereas, no response accounted for 11.1 %. Regarding the third question "Using sun light", yes response accounted for 4.0 %, whereas, no response accounted for 96.0 %. Regarding the fourth question "Referring to physician", yes response accounted for 96.0 %, whereas, no response accounted for 4.0 %. Regarding the fifth question "Referring to traditional healers", yes response accounted for 0.0 %, whereas, no response accounted for 100.0 %.

**Table 3: Frequency distribution of women according to response to practice domain questions**

| Question | Response | | | |
|---|---|---|---|---|
| | Yes | | No | |
| | n | % | n | % |
| Using medical herbs | 85 | 84.2 | 16 | 15.8 |
| Fluorescent use at home | 89 | 88.1 | 12 | 11.9 |
| Using sun light | 4 | 4.0 | 97 | 96.0 |
| Referring to physician | 97 | 96.0 | 4 | 4.0 |
| Referring to traditional healers | 0 | 0.0 | 101 | 100.0 |
| Nothing | 0 | 0.0 | 101 | 100.0 |

## Discussion

In the present study, most of participating women had knowledge about 2 methods of diagnosis and they accounted for 96.0 %, while 4% of them knew only a single diagnostic method. This finding reflects fair knowledge of women in our community about method of diagnosing neonatal jaundice. However, unfortunately all participating women know nothing about how to prevent neonatal jaundice during pregnancy. Therefore, healthcare provisional who are in touch with those women, namely governmental and private antenatal care clinics should spent more time and effort in order to explain to pregnant women the way how to avoid the problem of neonatal jaundice such as the establishment of community programs encouraging and supporting breastfeeding. In the current study, positive attitude toward neonatal was seen in significantly high

proportion of women enrolled in the study. For example worrying about development of neonatal jaundice was seen in 72.3 %, 92.1 % of the response disagree using traditional medicine, 100.0 % were unwary about multiple blood sampling to assess state of jaundice, 84.2 % of the response was disagree about avoidance of physician consultation and 64.4 % of the response was strongly agree with that neonatal jaundice should be considered seriously. This is consistent with previous studies from Nigeria [8] and Sri Lanka, [20] and Egypt [13]. For example, in Egypt 88.3% of participants strongly agreed to seek medical care if their babies developed NNJ. A study from Iran [19] reported similar results in perspective of the mean score; however, 63% of their study population had shown higher levels of attitudes. This difference might be attributable to the time lag between the onset of NNJ and seeking medical help, a finding corroborated by other studies [15, 8]. This observation is an important reminder that providing education and knowledge is not sufficient itself to change maternal behavior [11]. The use of traditional medicine is common in underdeveloped countries and our findings are in agreement with the vast majority of literatures in this regard [1, 7, 5]. We believe that in order to reduce such malpractices in the community, governmental effort should be directed to increase level of education of women in the community in addition to increasing the efforts offered by health workers in antenatal care clinics and institutes in addition to investing mass and social media in the correct direction of how to deal with prevention and management of neonatal jaundice. One of wrong approaches that were commonly practiced by women participating in the current study was the use of fluorescent use at home. However, one of good practices is the excellent proportion of positive response toward visiting physicians when facing problem of neonatal jaundice and avoiding traditional healers.

## Conclusion

**Financial Disclosure:** There is no financial disclosure.

**Conflict of Interest:** None to declare.

**Ethical Clearance:** All experimental protocols were approved under the College of Medicine/ University of Al-Qadissiyah/ Department of Paediatrics/ Al-Diwaniay Province/ Iraq and all experiments were carried out in accordance with approved guidelines.

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