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Knowledge, attitudes, and practices of community health workers in Ba'quba City on the treatment of neonatal jaundice

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Abstract

Neonatal jaundice (NNJ) is a leading cause of brain damage, physical and mental disability, and early death in many civilizations. Health workers need greater awareness. The research assessed primary care practitioners' knowledge of NNJ's description, causes, effective therapy, and consequences. The study was conducted at Diyala governorate's basic health institutions. The research ran from September 2017 through February 2018. Eight health clinics were randomly chosen among 98. After getting their agreement, community health workers were given self-administered questionnaires. Their identification wasn't necessary. Study excluded physicians. Ninety-two (92) of 100 health workers participated. Mean age (33.7yrs) and M:F ratio 2:4. Health workers' mean experience was (11.2 year). Only 25% of respondents could accurately define NNJ. 43.4 percent of NNJ test-takers pick the three right answers. In questioning Signs of severity " danger " in neonate with jaundice, 27.3% chose the five correct answers while 50% chose the three correct answers namely ABO incompatibly, Sepsis and Preterm labour in questioning what causes a NNJ, while 16% thought malarial infection and germs in breast milk or some insects are the cause of the NNJ. 68.4% choose phototherapy as an effective NNJ treatment. 46.9% of responders advised glucose water, 24.4% antibiotics. We conclude that primary health care practitioners in our area have knowledge gaps about newborn jaundice and its management and urge regular training workshops or seminars. This may lessen NNJ's influence on child health and well-being in underdeveloped nations.

Keywords: Knowledge, Attitudes, Practices, Health workers, Ba'quba City, Treatment, neonatal jaundice

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Introduction

The closest healthcare professionals to the community are those in primary care. They perform the crucial task of "triaging" patients at the initial point of contact because of their duty-placement post's at the edge of the healthcare delivery network. Regarding pediatric patients, they are qualified to, among other things, treat minor illnesses, provide immunizations, send seriously sick patients to larger hospitals (2° and 3° care levels), and educate parents about how to care for their children's health. Furthermore, they are assigned the additional task of running basic health facilities because of the lack of medically certified employees in poor nations [1]. In the first 28 days of life (the neonatal phase), around 45% of the estimated 4 million neonatal fatalities worldwide occurred, mostly from avoidable factors including preterm and NNJ [2]. About 80% of the infants with acute bilirubin encephalopathy who came late to a teaching hospital had at least one health professional meet them 24 hours before the brain injury and received poor medication, bad advice, and consolation [3]. For a variety of causes, jaundice may be clinically relevant. Bilirubin toxicity (kernicterus), which is caused by excessive amounts of unconjugated bilirubin, may result in irreparable brain damage, nerve deafness, choreoathetoid cerebral palsy, and mental retardation [4]. NNJ is to blame for around 75% of hospital readmissions in the first week of life [5]. The majority of instances are mostly caused by immature liver function, but some are the consequence of diseases that cause an excessive amount of the baby's red blood cells to be broken down (hemolyzed), such as hemolytic illness of the newborn [6]. Clinical jaundice must appear within 24 hours of birth, an increase in total serum bilirubin (TSB) concentration must be less than 5mg/dl/day, TSB concentration must be less than 13mg/dl, and direct serum bilirubin concentration must be between 1.5 and 2.0mg/dl, and clinical jaundice must persist for less than one week [7]. Jaundice must appear within the first 24 hours of life, bilirubin levels must rise more than 5 mg/dl per day, TSB levels must exceed 15 mg/dl in full-term infants or 14 mg/dl in pre-term infants, there must be signs of acute hemolysis, and hyperbilirubinemia must last for at least 10 days in full-term infants or 21 days in pre-term infants [8]. Prematurity, low birth weight, neonatal sepsis, Asian race, bruising, a previous sibling with a history of jaundice, breastfeeding, epidural anesthesia, instrumental delivery, and oxytocin use during labor are common clinical risk factors for neonatal jaundice. Other clinical entities that can present with neonatal jaundice include physiological jaundice, blood group iso-immunization, immaturity, or genetic deficiency of enzymes (9). To successfully manage NNJ, home birth attendants and main facility health staff must be competent. At order to achieve better results, healthcare professionals in primary health institutions must increase their capacity to diagnose NNJ and detect the need for referral [10]. The study's objective is to gauge primary healthcare professionals'

understanding of the symptoms, causes, suitable treatments, and consequences of NNJ.

Methods

The primary healthcare institutions in the governorate of Diyala are where the research was conducted. The study's time frame was from the first of September 2017 to the first of February 2018. Eight health facilities were chosen at random from a pool of 98 to participate in the survey. After receiving their permission, community health workers at these facilities were given a self-administered questionnaire to complete. They were not obligated to reveal who they were. Doctors of medicine were not included in the research. The authors created a 10-item questionnaire as the survey instrument. The first section included the respondents' job title, experience, and some demographic information, while the second section contained inquiries about NNJ. The remaining questions were of the multiple-choice kind, with the exception of four open-ended inquiries. The questions were designed to test the health professionals' knowledge of neonatal jaundice's definition or description, causes, treatments, and consequences, as well as how to check a baby for the condition. One of the questions was especially designed to find out how the health professionals treated NNJ in terms of attitude and practice. Individual primary healthcare providers were contacted and told about the survey's goal. People who agreed to take part in the research were asked to complete the questionnaire on their own. While inter-respondent contact was not allowed throughout the exercise, they were encouraged to ask the supervisors for clarification on any aspect of the questionnaire. Ethical approval: All aspects of the study were conducted in accordance with the principles outlined in the Declaration of Helsinki. Before collecting any samples, we were sure to get the patient's informed consent, both verbally and in writing. Document 144 (1/5/2022) states that the study methodology, subject information, and permission form were reviewed and approved by a local Ethics Committee.

Results

In the eight community health centers that were randomly chosen, 92 out of 100 healthcare professionals volunteered to take the survey. The 8 other people withheld their approval for unknown reasons. Male:female ratio was 2:4, with participants' ages ranging from 21 to 54 years old on average. The average amount of experience among health professionals was 11.2 years.

Table 1.**Demographic and job characteristics of the respondents**

Number of the respondents	92
sex ratio male: female	4:2
mean (SD) Years of experience	11.2
The mean age of health workers in years	33.7

In questioning about the NNJ the answers were as follows

Table 2.**General Knowledge of Respondents about NNJ**

No.	%	
23	25	Correctly define it as the yellowish coloring of the eyes and skin caused by an increase in TSB.
66	71.7	Define it partially correct
3	3.2	Left the question empty

We asked the respondents about how they can examine a neonate who has an NNJ, and Signs of severity " danger " in neonates with jaundice then asked also about what are causes think they can cause an NNJ all the answers were as illustrated in Table (3).

Table 3.**Answers regarding examining a neonate, signs of danger, and causes of neonatal jaundice**

43.4%	Select the three appropriate responses, respectively By looking at the eye Observing the skin by looking at the soles and palms
29.3%	choose 2 of 3 correct answers mentioned above
27.1%	By viewing stool color
27.3 %	Choose the five correct answers namely Refusal to eat or drink High pitched cry Arching of the back Convulsion Fever
32.6 %	Choose four correct answers mentioned above
38 %	Didn't know only one or two of signs of danger
	No one has gave another sign of danger in neonate with jaundice
50 %	Pick the three viable options, including "ABO incompatibility between the mother and the neonate," from the list. Sepsis pregnancy labour
14.1%	Choose two of the three correct answers mentioned above
18.4%	Choose one of the three correct answers mentioned above
7.6%	Infection from the mother's breast or milk
3.2 %	Malarial infection
5.4 %	Some insects
1 %	Has answered the open question regarding the causes of neonatal jaundice saying that it is an inherited disease and runs in families

On the question of effective treatment and testing the ability of respondents about treatment by specific drugs in NNJ, all the answers were as illustrated in Table (4)

Table 4.

Drugs used to treat neonatal jaundice

68.4%	Choose phototherapy as an effective treatment
7.6%	Choose the blood exchange as an effective treatment
23.9%	Believe that both answers are effective treatment
46.9 %	Glucose water
24.4 %	antibiotics
20.4 %	left the question blank
4 %	Immunoglobulin
2.04 %	Vitamins
2.04 %	Diazepam

In questioning about what would they do when having a case presented with NNJ, the answers were as in Table (5)

Table 5.

Answers regarding managing a neonate with NNJ

By some drugs	5.4 %
By herbal remedies	3.2 %
Refer to hospital	59.7 %
Expose the neonate to the sun light	29.3 %
No one has gave a specific way to treat neonatal jaundice	

In testing the ability of respondents to realize what will occur if the diagnosis and treatment of a neonate with NNJ has been delayed, we asked them about the complications of NNJ and the answers were as in Table (6).

Table 6.

Answers regarding complications of neonatal jaundice

Death	72.8 %
Brain damage	78.2 %
Mental retardation	50 %
Body deformity	25 %
Convulsions later in life " epilepsy "	84.7 %

One the testing of the awareness of respondents about the prevention of NNJ, 48 (52.1%) didn't know any preventive measure for NNJ, while the answers of the remaining 44(47.8%) are listed in Table (7).

Table 7.**Answers from 44 respondents regarding preventive measures**

54.5%	Pre-marriage ABO screen
29.5%	Recommend Anti-D After delivery
11.3%	If there is family history ,antibiotics should be given post delivery
4.5%	Left it blank

Discussion

The current research found that the participants knew very little about numerous NNJ-related topics, and it also exposed some misunderstandings and incomplete knowledge about certain important topics. First off, the majority of respondents claimed to have heard of NNJ, but only a small minority provided a fully accurate response, indicating that NNJ is well-known but that most people have a very limited understanding of it. Second, the participants' understanding of significant NNJ causes in the neighborhood where they are working as health professionals was insufficient. Prematurity, sepsis, glucose-6-phosphate dehydrogenase deficiency, and ABO blood type incompatibility are the main causes of severe jaundice in newborns in Nigeria [10,11]. More than 60% of the respondents indicated that they had a decent understanding of the three right answers—blood group discrepancy, sepsis, and preterm labor—when asked about the causes of NNJ.

Since glucose-6-phosphate dehydrogenase is too complex for community health workers to comprehend, it was purposefully kept from the questionnaire. Surprisingly, only approximately half of the respondents claimed they knew of any medicine that may be used for drug treatment, and of those who said they did, only half provided supporting drugs; no one provided a specific drug to be used in NNJ. Amazingly, however, and for as-of-yet unidentified reasons, a sizable portion of our responders named antibiotics as being useful. Since using untested drugs to treat NNJ is very risky, we see this as a worrisome trend. According to our observations, this method gives moms of afflicted kids a false feeling of security that often results in the babies' hospital presentations being delayed after kernicterus has already developed [12, 13]. The majority of respondents advise sending the neonate to the hospital if it has NNJ, which is best practice and helps avoid complications brought on by delayed diagnosis and treatment. A smaller percentage of respondents recommend herbal treatments and sunlight exposure as effective NNJ management strategies. Neonatal hyperbilirubinemia has traditionally been treated with phototherapy, and severe jaundice should be treated with exchange transfusion [14,15]. It is crucial to make sure that throughout their training, primary healthcare providers and community health

workers have enough exposure to clinical pediatrics. Because unconjugated bilirubin is neurotoxic, NNJ is important for health. As a result, severely harmed infants suffer brain damage and either pass away or survive with significant physical and mental impairment. In this sense, our responders showed a respectable level of familiarity with various NNJ problems. However, there is a need to improve community health professionals' familiarity with additional severe illnesses that may arise from severe NNJ, such as cerebral palsy, mental retardation, sensorineural deafness, and epilepsy.

This will help them recognize NNJ as a potentially dangerous condition and instruct them on how to take the correct steps to prevent such consequences by immediately sending afflicted newborns to the hospital for effective therapy [14, 15]. Preventive interventions had a limited impact on NNJ treatment, and the respondents' understanding of preventive strategies was woefully inadequate. More than half of respondents indicated they were unaware of any prophylactic methods; those who did respond suggested premarital ABO testing and anti-D injections after childbirth as preventative measures for the reasons. It is encouraging to see in our research that all of the participants mention NNJ in the health talks they provide to their pregnant customers since health education is a crucial component of community health care services. It becomes crucial that they keep up with developments in the field to provide the public with reliable information [14, 15].

Conclusions

In our region, primary healthcare providers lack understanding about newborn jaundice and how to treat it. To bridge these knowledge gaps, we advise holding frequent training seminars or workshops. This is thought to lessen the negative effects of NNJ on children's health and well-being in underdeveloped nations.

Abbreviations

Not applicable

Declarations

Ethics approval and consent to participate

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Competing Interests

The author declares that the research was conducted without any commercial or financial relationships that could be construed as a potential conflict of interest.

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