Volume 3, Issue 7, 2025

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

ASSESSMENT OF KNOWLEDGE AND ATTITUDE REGARDING RISK FACTORS OF NEONATAL JAUNDICE AMONG MOTHERS OF NEWBORN AND HEALTH CARE PROVIDERS AT NATIONAL HOSPITAL AND MEDICAL CENTER DHA LAHORE

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DOI: https://doi.org/10.5281/zenodo.17139436

Keywords
Neonatal jaundice, risk factors, mothers, healthcare providers, awareness

Article History
Received: 26 June 2025
Accepted: 05 September 2025
Published: 17 September 2025

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Abstract

Background: *Neonatal jaundice is the most common condition requiring medical attention in newborns, resulting from an imbalance between bilirubin production and excretion. Risk factors include prematurity, low birth weight, ABO incompatibility, G6PD deficiency, cephalhematoma, infections, genetic mutations, and feeding difficulties, with unique associations such as oil massage also reported.*

Materials and Methods: *A cross-sectional study was conducted at National Hospital and Medical Centre, DHA Lahore, from November to December 2023. A total of 96 participants (64 mothers of newborns and 32 healthcare providers) were surveyed using close-ended questionnaires. Data were analyzed using SPSS version 20.*

Results: *Among mothers, 60% demonstrated awareness of neonatal jaundice risk factors, while 40% lacked knowledge. Among healthcare providers, 75% showed adequate knowledge and attitudes, whereas 25% had gaps in awareness.*

Conclusion: *The study highlights the need for educational programs to improve maternal and provider knowledge regarding neonatal jaundice risk factors.*

INTRODUCTION

Neonatal jaundice is the most common condition requiring medical attention in newborns, occurring due to an imbalance between bilirubin production and excretion (Dennery, 2001). During pregnancy, maternal clearance of bilirubin occurs via the placenta; however, after birth, neonates must process bilirubin independently, often leading to elevated levels because of organ immaturity (Iacob, 2011). Jaundice manifests as yellow discoloration of the skin and sclera and affects approximately 60% of term and 80% of preterm infants within the first week of life (Slusher, 2004). While often a physiological transition, neonatal jaundice remains the leading cause of hospital readmission in early life (Seidman, 1995; Maisels & Kring, 1998; Geiger, 2001).

The primary clinical concern associated with hyperbilirubinemia is its potential neurotoxicity, as elevated unconjugated bilirubin can cause kernicterus, cerebral palsy, and hearing loss (Watchko, 2006; Watchko, 2009; Beachy, 2007). Risk factors include prematurity, low birth weight, ABO incompatibility, G6PD deficiency, cephalhematoma, infections, genetic mutations, and feeding difficulties (Chen, 2011). Studies indicate higher incidence rates in Asian populations due to both environmental and genetic influences (Click,

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

2013). Additionally, unique associations such as oil massage and ethnicity have been reported (Chen, 2011).

Breastfeeding practices also play a role in neonatal jaundice. Newman and Gross (1963) first described breast milk jaundice, characterized by unconjugated hyperbilirubinemia in otherwise healthy infants, which decreases upon temporary interruption of breastfeeding and reappears when resumed. This late-onset condition affects nearly one-third of infants (Schneider, 1986; Gartner, 2001). Conversely, massage stimulation has been shown to facilitate bilirubin excretion by enhancing meconium passage, potentially preventing neonatal jaundice (Chen, 2011). Taking these factors into account, this study aims to investigate the incidence and modifiable risk factors of neonatal jaundice in a low-resource setting to inform preventive strategies.

1. Materials and Methods

1.1 Study Design and Period

A cross-sectional study design was adopted and conducted over two months, from November to December 2023, at the National Hospital and Medical Centre, Lahore.

1.2 Study Population and Sampling

The target population included healthcare providers and mothers of newborns present during the study period. Using a convenient sampling technique, a total of 96 participants were recruited. Inclusion criteria involved all consenting participants without dementia, hearing, or visual impairments. Exclusion criteria included those with hearing or visual impairments and critically ill individuals.

1.3 Data Collection Tool

Data were collected through a predesigned, close-ended questionnaire after obtaining informed consent. The questionnaire comprised 20 items: 14 questions assessed mothers' knowledge of neonatal jaundice risk factors, while six questions evaluated the knowledge of healthcare providers working in pediatric and obstetrics departments.

1.4 Variables

The dependent variable was the set of factors influencing neonatal jaundice. Independent variables included socioeconomic characteristics such as age, sex, and educational status.

1.5 Data Analysis

All collected data were entered and analyzed using SPSS version 20. Descriptive statistics were applied to summarize the responses, and results were presented in frequencies and percentages.

2. Results

Table 1. Mothers' Knowledge of Neonatal Jaundice Risk Factors (n = 64)

Sr. No	Question	Agree n (%)	Disagree n (%)	Neutral n (%)
1	Jaundice is more common in male babies than in female babies	32 (50.0)	24 (37.5)	8 (12.5)
2	Oil massage is effective for jaundice	18 (28.1)	40 (62.5)	6 (9.4)
3	Baby becomes lethargic in jaundice	34 (53.1)	17 (26.6)	13 (20.3)
4	Jaundice may cause fits	19 (29.7)	33 (51.6)	12 (18.8)
5	Baby's urine color is darker than normal in jaundice	58 (90.6)	3 (4.7)	3 (4.7)
6	Jaundice is more common in exclusively breastfed babies	33 (51.6)	24 (37.5)	7 (10.9)
7	Phototherapy and sunrays are effective treatments	58 (90.6)	4 (6.3)	2 (3.1)
8	Mismatched blood group of baby and mother causes jaundice	19 (29.7)	35 (54.7)	10 (15.6)
9	Prematurity leads to jaundice	36 (56.3)	17 (26.6)	11 (17.2)
10	Head swelling at birth is a cause of jaundice	22 (34.4)	36 (56.3)	6 (9.4)

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

11	If one child had jaundice, every future child will also have it	11 (17.2)	40 (62.5)	13 (20.3)
12	Blood tests are necessary to diagnose jaundice	41 (64.1)	18 (28.1)	5 (7.8)
13	Jaundice causes weight loss in newborns	25 (39.1)	24 (37.5)	15 (23.4)
14	In jaundice, babies feed less	33 (51.6)	28 (43.8)	3 (4.7)

Table 1 shows mothers' knowledge of neonatal jaundice. Awareness was relatively high regarding symptoms and management: 90.6% recognized dark urine and 90.6% acknowledged phototherapy and sunrays as effective treatments. However, misconceptions persisted, such as believing jaundice is always hereditary (17.2% agreed) or linked to oil massage (28.1% agreed).

Table 2. Healthcare Providers' Knowledge of Neonatal Jaundice (n = 32)

Sr. No	Question	Agree n (%)	Disagree n (%)	Neutral n (%)
1	Overdose of oxytocin can cause jaundice in newborns	9 (28.1)	16 (50.0)	7 (21.9)
2	Babies born through SVD are more prone to jaundice than LSCS	18 (56.3)	10 (31.3)	4 (12.5)
3	Substances in mother's milk may inhibit the infant's liver to process bilirubin	16 (50.0)	9 (28.1)	7 (21.9)
4	Exchange blood transfusion is the fastest way to cure jaundice	20 (62.5)	10 (31.3)	2 (6.3)
5	Untreated jaundice may affect brain functioning	23 (71.9)	6 (18.8)	3 (9.4)
6	Congenital diseases can cause jaundice	13 (40.6)	14 (43.8)	5 (15.6)

Table 2 highlights healthcare providers' knowledge. The majority correctly identified that untreated jaundice can damage brain function (71.9%) and that exchange transfusion is an effective treatment (62.5%). Still, misconceptions existed, with 50% attributing jaundice to oxytocin overdose and 50% to inhibitory substances in breast milk. Overall, while knowledge was stronger among providers than mothers, notable gaps remain in both groups, underscoring the need for targeted education.

3. Discussion

The findings of this study revealed that mothers had mixed awareness regarding neonatal jaundice, with strong recognition of symptoms such as dark urine (90.6%) and effective treatments like phototherapy and sun exposure (90.6%), but misconceptions persisted about risk factors such as oil massage (28.1%) and hereditary inevitability (17.2%). Similar results have been reported in community-based studies, where mothers often recognize visible signs of jaundice but lack knowledge of underlying causes and complications (Memon et al., 2020). This highlights the need for maternal education, as lack of awareness may lead to delays in seeking medical care and increase the risk of severe hyperbilirubinemia (Shah et al., 2019).

Healthcare providers demonstrated comparatively better knowledge, particularly in understanding that untreated jaundice may cause neurological damage (71.9%) and acknowledging exchange blood transfusion as an effective treatment (62.5%). However, gaps remained, with 50% attributing jaundice to oxytocin overdose and 50% to inhibitory substances in breast milk. Previous research has documented similar misconceptions among healthcare staff in low-resource settings, where inadequate training and reliance on traditional beliefs contribute to inconsistent practices (Ogunfowora & Daniel, 2006). Such misconceptions may compromise timely diagnosis and appropriate management, thereby increasing the risk of kernicterus and long-term complications (Olusanya et al., 2015).

Overall, the results underscore the importance of targeted awareness programs for both mothers and

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

healthcare providers. Evidence shows that structured health education significantly improves knowledge of neonatal jaundice and reduces morbidity (Nahar et al., 2019). Regular training for healthcare workers, alongside community awareness campaigns for mothers, can strengthen early recognition and promote timely interventions. Given that neonatal jaundice remains one of the leading causes of preventable neonatal morbidity in developing countries, bridging these knowledge gaps is essential for reducing the risk of severe hyperbilirubinemia and its complications (Olusanya et al., 2018).

4. Conclusion

The study found that while both mothers and healthcare providers recognized some important aspects of neonatal jaundice, significant misconceptions and knowledge gaps persisted regarding its causes and management. To address these gaps, targeted educational programs for mothers and regular training sessions for healthcare providers are recommended to ensure early recognition, timely treatment, and prevention of severe complications.

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