

Knowledge, Attitude and Practice of Neonatal Jaundice among Healthcare Workers in Bingham University Teaching Hospital, Jos, Nigeria

Shehu, M^{*}, Ubanyi, T.O¹, Shehu, H². and Musa, J.M³.

^{*}Department of Paediatrics, Bingham University Teaching Hospital.

¹Department of Community Medicine and Primary Health Care, Bingham University Teaching Hospital.

²Department of Surgery, Bingham University Teaching Hospital

³Department of Paediatrics, Bingham University Teaching Hospital

Abstract

Neonatal jaundice is still a serious health problem in Nigeria today which is often times associated with debilitating consequences. The knowledge, attitude and practice of healthcare workers could act as a two- edged sword either by posing risks to patients or providing help when needed. **Aim:** The study aims to assess the knowledge, attitude and practices of healthcare workers in Bingham University Teaching Hospital on Neonatal Jaundice. **Method:** This was a descriptive cross-sectional study which was carried out among Healthcare workers in Bingham University Teaching Hospital from April to June 2019. This was a proportionate purposive sampling of doctors, nurses and nursing aids that consented to the study. The knowledge, attitude and practice of Neonatal Jaundice was assessed using a pretested questionnaire which was analyzed using SPSS version 20. **Results:** The results showed 89% of respondents were able to correctly identify jaundice. About 80% of respondents recognized blood group incompatibility as a cause of jaundice, 80% of respondents encouraged patient to seek help within 24 hours after the appearance of jaundice and 88% of respondents recognize phototherapy as a modality of treatment for neonatal Jaundice. This shows an overall good knowledge, attitude and practice towards neonatal jaundice among tertiary healthcare workers in Bingham University Teaching Hospital.

Keywords: Attitude, Knowledge, Practice, Neonatal Jaundice, Healthcare workers, Jos.

Introduction

Neonatal morbidity and mortality remain very high in the developing countries of sub-Saharan Africa, Asia and Latin America (Owa and Osinaike, 1998) and one of the important contributors to this is neonatal jaundice (NNJ) (Ogunfowora and

Daniel, 2006). Neonatal jaundice refers to the yellowish discoloration of the skin and sclera of a newborn by bilirubin (Zupan, 2005) it is a transitional phenomenon affecting most newborns with largely benign consequences in the first week of life. It typically resolves within 3 to 5 days without significant complications in the absence of comorbid prematurity, sepsis, or hemolytic disorders.

In some infants, NNJ may become severe enough to put them at risk for bilirubin-induced mortality or long-term neurodevelopmental impairments necessitating effective evaluation and treatment (Bolajoko *et al.*, 2016). Jaundice due to unconjugated hyperbilirubinemia is also the most common clinical problem in the neonatal period in many parts of the world (Ogunfowora and Daniel, 2006). Neonatal Jaundice is still a problem in Nigeria today and is known to have debilitating consequences including death (Parkash and Das, 2005).

The risk of severe NNJ is highest between 3 and 6 postnatal days when the plasma or serum bilirubin level reaches its peak in most infants. NNJ was estimated to account for 8 under-5 deaths per 100000 (95% uncertainty interval [UI]: 7–9) in 2016 globally. It ranked 16th from >100 possible causes of under-5 mortality consistently since 1990 (GBD 2016 Mortality Collaborators, 2016).

The mortality rankings among the 10 countries that frequently account for the largest number of neonatal deaths worldwide shows half of the countries (Nigeria, the Democratic Republic of the Congo, Ethiopia, Angola, and Kenya) are in Sub-Saharan Africa, 3 (India, Pakistan, and Bangladesh) are in South Asia, and 2 (China and Indonesia) are in East or Southeast Asia (UNICEF 2016).

Bilirubin-induced mortality was consistently among the top 15 causes of neonatal mortality in these 10 countries and among the top 20 causes of under-5 mortality in all but Indonesia, Angola, and Kenya (Liu 2016). Timely detection, monitoring, and treatment within this window is effective in preventing most bilirubin-induced mortality (Bolajoko *et al.*, 2016).

The healthcare worker has a huge role to play to educate and correct misconceptions about NNJ for the general population. Every health care worker irrespective of their cadre has a role to play in educating the population on neonatal jaundice whenever the need arises.

Methodology

This was a descriptive cross-sectional study carried out at Bingham University Teaching Hospital, Jos, which is a tertiary healthcare centre.

Jos is the state capital of Plateau State located in the North Central Zone of Nigeria and home about 900,000 people according to the 2006 census. Jos also has four tertiary health centres as well as a good number of private hospitals and Primary health centres. The study enrolled a total of 113 respondents who are staff of the teaching hospital, representing doctors, nurses and nursing aides from all departments of hospital.

The doctors included consultants, residents, medical officers, postgraduate trainee. These respondents were grouped together as healthcare workers for the purpose of the study. The instrument used for data collection was a pre-tested self-administered questionnaire. A proportionate purposeful sampling technique method was used. The questionnaire was distributed to respondents and collected upon completion.

The questionnaire assessed the socio-demographic characteristics, knowledge and practice of Neonatal Jaundice among the respondents. The data was entered and analysed using SPSS v 20.0 statistical software (SPSS Inc., Chicago, Illinois, USA). The frequency was analyzed for each variable and results were presented in tables and figures. Ethical consideration taken for this study was reviewed and approved by Bingham University Teaching Hospital Ethical Committee and for each respondent, consent was obtained and confidentiality was ensured using serial numbers in place of names.

Results

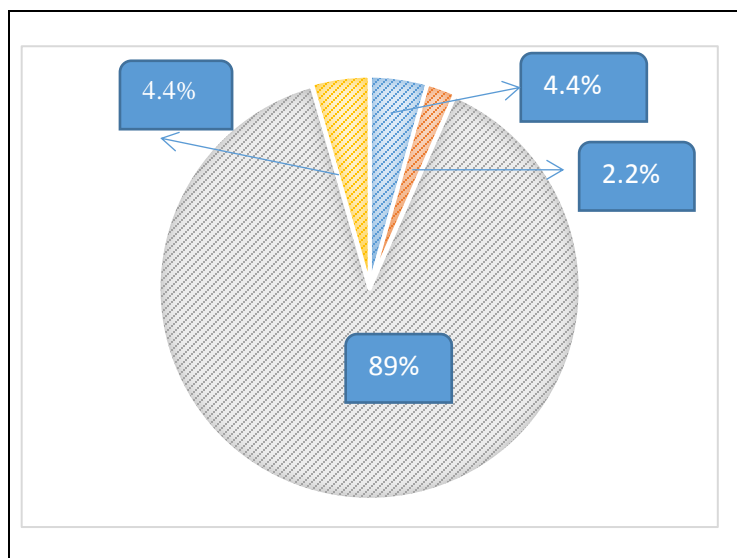


Figure 1. Knowledge of healthcare workers on Neonatal Jaundice

89% of respondents correctly knew that NNJ is the yellowish discoloration of the sclera and skin, 4.4% described it as yellowish discoloration of the sclera only, another 4.4% do not know and 2.2% described it as yellowish discoloration of the skin only.

Table 1. Source of Information on Neonatal Jaundice

Source of Information	Frequency	Percent (%)
Healthcare Worker	68	60.1
Lectures/ Seminar	43	38.1
Relatives/Friends	2	1.8
Total	113	100

60% of the respondents' source of information on neonatal jaundice is from a healthcare worker, while about 1.8% got their information was from family and friends.

Table 2. Causes of Neonatal Jaundice

Causes of Neonatal Jaundice	Frequency	Percent (%)
Blood group incompatibility	83	73.5
Haematologic/ Hereditary Disease	52	46
Breast milk jaundice	45	39.8
Napthalene balls	41	36.3
Infectious Diseases	50	44.2
Medications given during labour	17	15.0
G6PD Deficiency	49	43.4
I don't know	2	1.8
Prematurity	54	47.8
Delayed breastfeeding	45	39.8

The table shows knowledge of respondents on causes of neonatal jaundice. 1.8% of respondents do not know the cause of neonatal jaundice.

However, 73.5% of respondents identified blood group incompatibility as the cause of neonatal jaundice.

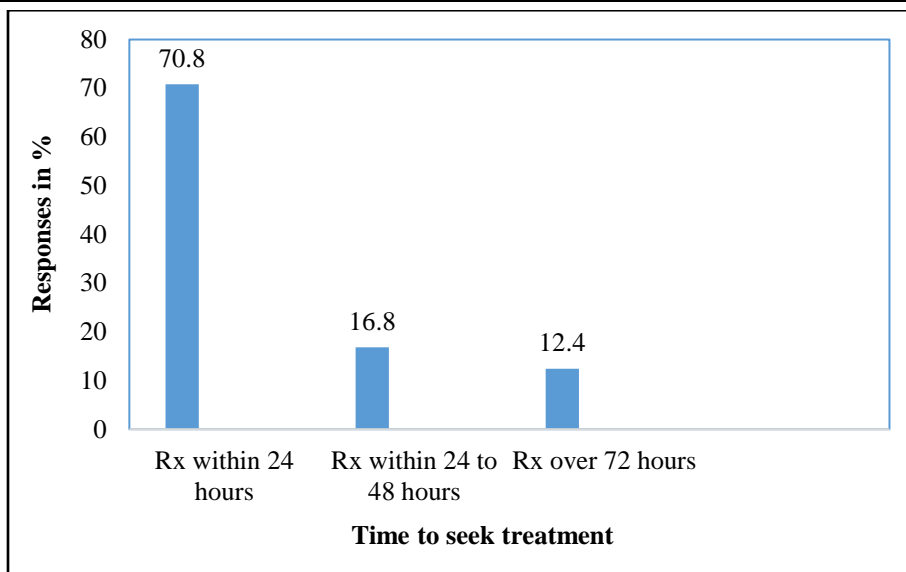


Figure 2. 70.8% of respondents encourage parents to seek treatment for NNJ within 24hours, 16.8% encourage parents to seek treatment within 24 to 48 hours while 12.4% of respondents encourage patients to seek treatment over 72hours.

Table 3. Sites to look for jaundice

Site	Frequency	Percent (%)
Eyes	99	87.6
Skin	88	77.9
Soles/Palms	36	31.9
Colour of stool/urine	27	23.9

The table shows respondents knowledge on sites to look for jaundice. 87.6% of respondents identified the eyes as common site to check for jaundice.

Table 4. Danger signs of Neonatal Jaundice

Danger signs	Frequency	Percent (%)
Fever	64	56.6
High pitch cry	59	52.2
Weakness	43	38.1
Upward rolling of the eye	33	29.2
Refusal to feed	62	54.9
Convulsions	42	37.2
Arching of the back	26	23.0
Fast Breathing	26	23.0

Table 4 shows the respondents knowledge on the danger signs of jaundice. Fever was the commonest known danger sign with 56.6%, the least known danger sign was arching of the back and fast breathing with 23% each.

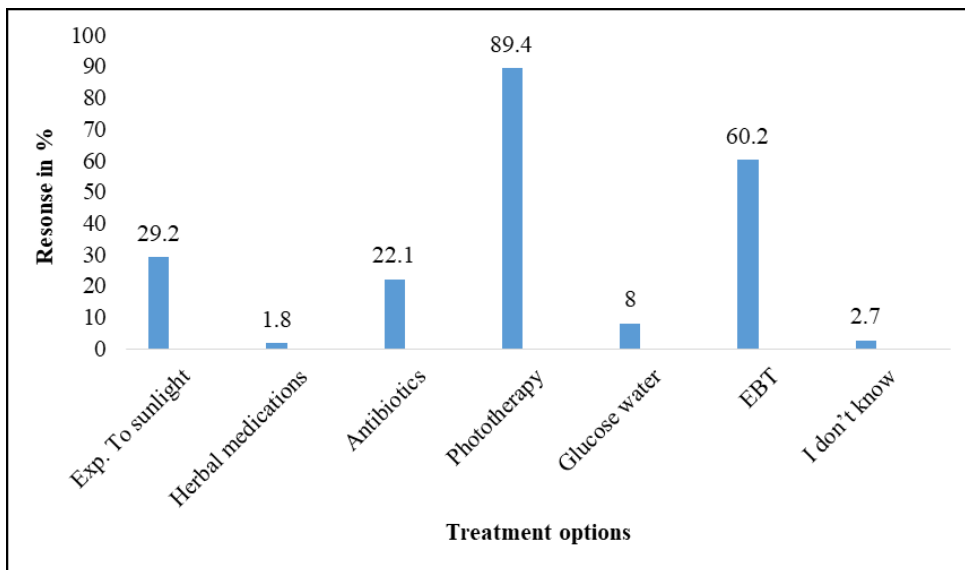


Figure 3 Shows that 88.4% of respondents recognize phototherapy as a modality of treatment for neonatal jaundice

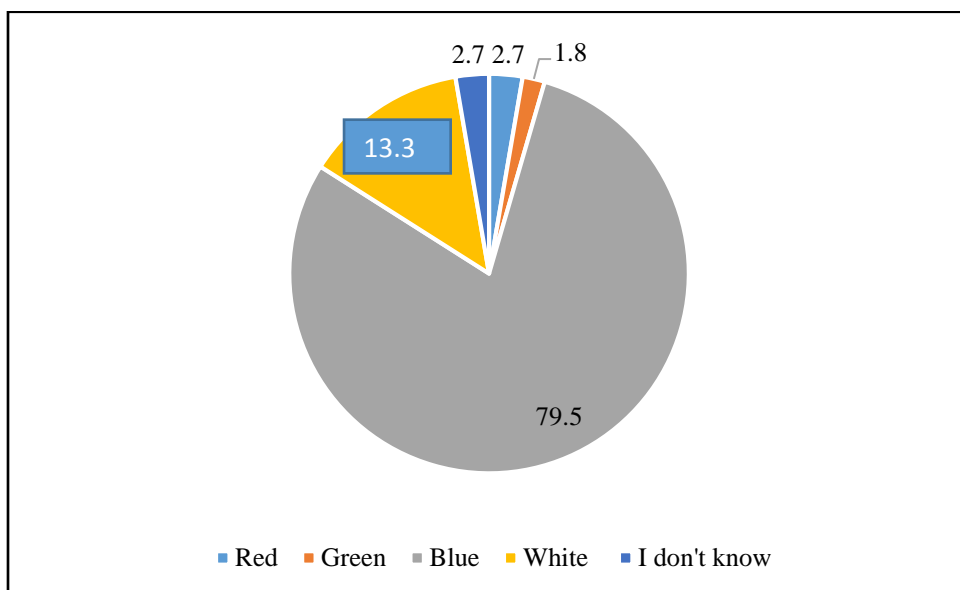


Figure 4 shows respondents answers on effective phototherapy. 79.5% of respondents agree that blue light is effective phototherapy. 13.3% of respondents chose white light, 2.7% chose red light and another 2.7% did not know.

Table 5. Complications of NNJ

Complications of NNJ	Frequency	Percent (%)
Blindness/Deafness	25	22.1
Delayed developmental Milestones	74	65.5
Death	54	47.8
Cerebral Palsy	63	55.8
Seizure disorder	52	46
I don't know	2	1.8

Table 5 shows complications of NNJ. 65.5% of respondents identified delayed developmental milestone as a complication of NNJ. This was followed by cerebral palsy with 55.8%.

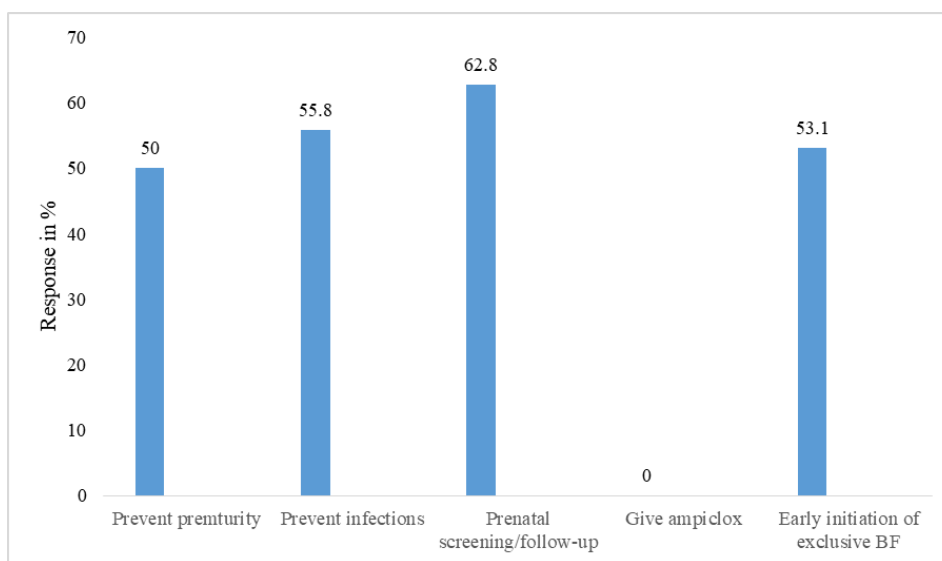


Figure 5 shows respondents answers to prevention of jaundice. No respondent gave the use of ampiclox as a means to prevent jaundice. while 62.8% of respondents gave prenatal screening and follow up as a means to preventing jaundice.

Table 6. Peoples' belief on the cause of Jaundice

Cause of Jaundice	Frequency	Percent (%)
Bad breast milk	45	39.8
Bad blood	42	37.2
Evil eye	28	24.8
Eating yellow colored food substances	10	8.8
Change in weather	12	10.6

The table shows respondents opinions on peoples' belief on the cause of jaundice. 39.8% of respondents think that people believe the cause of jaundice is bad breast milk.

Discussion

As part of the diagnosis for NNJ is the ability to recognize jaundice as yellowish discoloration of the skin and sclera. Recognition of this usually paves the way for treatment. Participants were assessed on their knowledge of what neonatal jaundice is and various options were available. 89% of participants were able to identify jaundice as yellowish discoloration of the skin and sclera, while 4.4% of participants recognized it as yellowish discoloration of the sclera only, 2.2% of respondents recognized it as discoloration of the skin while 4.4% of the respondents did not know. The ability to recognize jaundice is significant in the management, as well as the parts of the body in which the jaundice was first noticed as this could give an idea on extent of the jaundice as well as progression of the jaundice. This finding is in contrast to another study conducted by Adeola and Adebola 2017 among Community Health Workers at PHCs in Ibadan where it was found that only 5.2% of participants correctly identified jaundice as yellowish discoloration of the skin and sclera. Another study also done among Community health workers by Olusoga and Olusoji in 2006 had 51.5% of respondents' correctly defining jaundice as yellowish discoloration of the skin and sclera.

The reason for this disparity could stem from the fact that tertiary health centers are usually the facility where NNJ is treated in this clime. Exposure to patients with NNJ, access to phototherapy, frequent lectures and seminars can contribute to better knowledge of NNJ by healthcare workers in tertiary health institutions. It would be safe to say that healthcare workers in the tertiary health centers have good knowledge of neonatal jaundice.

Source of respondents' information on NNJ was mostly from a healthcare worker. This accounted for 60.8% of participants. This was followed by seminars/ lectures which made up 38.1% of respondents and 1.1% from relatives and friends. Explanation for this could be that healthcare workers in tertiary health facilities have frequent lectures and seminars on various topics of interest. Formal learning and informal learning thrive in tertiary health facilities comparing with primary health centers.

Respondents also looked at the possible causes of jaundice from the study, 73.5% of respondents chose blood group incompatibility as a cause of jaundice, and this was followed by infections having 44.2% and G6PD deficiency accounting for 43.4%.

However, the leading causes of NNJ from studies that conducted appropriate clinical and laboratory investigations among infants detected with TSB ≥ 10 mg/dL (170 $\mu\text{mol/L}$) were G6PD deficiency, ABO incompatibility, sepsis and prematurity/low birth weight, singly or in combination (Olusanya *et al.*, 2016). Respondents were also able to correctly identify causes of jaundice. A study done amongst community health workers showed 92% of respondents identifying malaria in pregnancy as the cause of NNJ. This is in contrast to respondents who work in a tertiary health center. For attitude, 70.8% of respondents encourage parents to seek for medical attention within 24 hours. This is also a fair assessment of the healthcare workers as time is a crucial factor in the management of NNJ. 88.4% of respondents correctly identified phototherapy as a modality of treatment for NNJ. Whereas a study done among community health workers, 67.1% of respondents recognized using glucose water as treatment of jaundice.

Conclusion

The findings suggest that knowledge attitude and practice of health care workers on NNJ at the tertiary institution is good, however there is still room for improvement. We would encourage more lectures and seminars on the topic as well sensitization to even community health workers and the public at large.

Acknowledgement

The authors would like to express their gratitude to the members of staff Bingham University Teaching Hospital, who availed themselves for this study.

References

1. Adebola, E.O. and Adeola, O.O. 2017. Primary health workers' knowledge and practices relating to neonatal jaundice in Ibadan, Nigeria. *African Journal of Primary Health Care and Family Medicine*, 9(1): 1081.
2. GBD 2016 Child Mortality Collaborators. Global, regional, and national under-5 mortality, adult mortality, age-specific mortality, and life expectancy, 1970- 2016: a systematic analysis for the Global Burden of Disease Study 2016. *Lancet*, 390:1084–1150.
3. Liu, L., Oza, S., Hogan, D. 2016. Global, regional, and national causes of under-5 mortality in 2000-15: an updated systematic analysis with implications for the Sustainable Development Goals. *Lancet Journal*, 388: 3027–3035.
4. Olusoga, B.O. and Olusoji, J.D. 2006. Neonatal jaundice and its management: Knowledge, attitude and practice of community health workers in Nigeria. *BMC Public Health*, 6: 19-25.

5. Olusanya, B.O., Osibanjo, F.B., Mabogunje, C.A., Slusher, T.M. and Olowe, S.A. 2016. The burden and management of neonatal jaundice in Nigeria: A scoping review of the literature. *Nigerian Journal of Clinical Practice*, 19: 1-17.
6. Owa, J.A. and Osinaike, A.I. 1998. Neonatal morbidity and mortality in Nigeria. *Indian Journal of Paediatrics*, 65: 441-9.
7. Parkash, J. and Das, N.J. 2005. Pattern of admissions to neonatal unit. *College of Physicians and Surgery*, 15: 341-4.
8. United Nations Children’s Fund (UNICEF). *The State of the World’s Children 2016. A Fair Chance for Every Child*. New York, NY: United Nations Children’s Fund (UNICEF); 2016.
9. Zupan J. 2005. Perinatal mortality in developing countries. *New England Journal of Medicine*, 352: 2047–2048.