

Assessment of Nurses Knowledge Regarding Blood Exchange Transfusion at Mosul Neonatal Care Units

Amwaj Saad Aldeen Ahmed¹ | Nasir Muwfaq Younis²

¹Oncology Hospital, Nineveh

Health Directorate, Iraq

²Prof, PhD. College of

Nursing / University of

Mosul/IRAQ



Abstract:

Background: Neonatal hyperbilirubinaemia is the most common clinical problem in the new born period. Phototherapy has become the routine both for treatment of neonates with hyperbilirubinaemia and for prophylaxis in high risk patients such as preterm infants.

Objectives: To aim to assess of Nurses Knowledge Regarding Blood Exchange Transfusion at Mosul Neonatal Care Units

Methods: Purposive Sampling (Non-probability) to determine the assess of Nurses Knowledge Regarding Blood Exchange Transfusion at Mosul Neonatal Care Units. The sample was collected for the study in Mosul neonatal care units that they were >60) nurse who are works in neonatal care units. Data is analyzed by using Statistical Package for Social Science (SPSS) software for Windows (Version 26).

Results: The finding results refer to age of (31-35), with a percentage of about 33.33%. Likewise, women were more involved in the study 56.67%. While the highest cultural level was graduates of nursing institutes 43.34%, Sixty percent of the sample did not have any training course specializing in blood transfusion among newborns.

Conclusion: This study concluded that the knowledge of nurses who worked in pediatric care units regarding the blood transfusion process was very weak and poor, and the main reason is the lack of training courses dealing with this topic.

Keywords: Assessment, Nurses Knowledge, Blood Exchange Transfusion, Neonatal Care Units.

Copyright: ©2024 The Authors. Published by Publisher. This is an open access article under the CC BY-NC-ND license (<https://creativecommons.org/licenses/by-nc-nd/4.0/>).

Introduction:

Neonatal jaundice characterized by yellowish discoloration of the skin caused by hyperbilirubinemia affects up to 60% of term neonates and 80% of neonates with a gestational age of 35 weeks or more in the first two weeks after

birth. Globally, neonatal jaundice accounted for 1309 deaths per 100 000 live births and 113 401 disability adjusted life years (DALYs). Severe hyperbilirubinemia, serum bilirubin levels >20 mg/dL (342 µmol/L) is a leading cause of

hospitalization in the first week of life and accounts for up to 35% of hospital readmissions in the first month of life. If treatment is delayed, mortality, acute bilirubin encephalopathy, and bilirubin induced neurological damage (BIND) with neurodevelopmental delay and disability can occur⁽¹⁾. In most of cases there is no specific underlying physiologic disorder. In other cases it results from red blood cell breakdown, liver disease, infection, hypothyroidism, or metabolic disorders (pathologic). A bilirubin level more than 34 $\mu\text{mol/L}$ (2 mg/dL) may be visible. Concerns, in otherwise healthy babies, occur when levels are greater than 308 $\mu\text{mol/L}$ (18 mg/dL), jaundice is noticed in the first day of life, there is a rapid rise in levels, jaundice lasts more than two weeks, or the baby appears unwell. In those with concerning findings further investigations to determine the underlying cause are recommended⁽²⁾. Premature infants are more prone to bilirubin encephalopathy than their full-term counterparts and should be managed with thresholds adjusted accordingly. The baby with a serum bilirubin level approaching or above the exchange transfusion line is a neonatal emergency. The prompt use of multiple phototherapy and timely availability of blood for an urgent exchange transfusion will avoid chronic

neurological sequelae in the majority of cases. Symptomatic bilirubin encephalopathy remains an absolute indication for exchange transfusion^(3,4,5,6,7). The aim of this study to assess of Nurses Knowledge Regarding Blood Exchange Transfusion at Mosul Neonatal Care Units.

Methodology:

Before beginning the research steps, a proposal was submitted to the Scientific and Ethical Committee for Graduate Studies at the College of the Nursing/University of Mosul to declare the title and steps of the research, after which formal approval for the research title was obtained by Order No.33 dated 12/29/2023. A non-randomized Purposive Sampling (Non-probability) to determine the assess of Nurses Knowledge Regarding Blood Exchange Transfusion at Mosul Neonatal Care Units. The sample was collected for the study in Mosul neonatal care units that they were 60 nurse who are works in neonatal care units. Data is analyzed by using Statistical Package for Social Science (SPSS) software for Windows (Version 26).

Results:

Table (1): Distribution of the sample according to demographic data(N=60)

| | Categories | number | Percentage |
|-------------------------------------------|--------------------|--------|------------|
| Age | 20 -25 | 9 | 15% |
| | 26- 30 | 12 | 20% |
| | 31-35 | 20 | 33.33% |
| | 36-40 | 14 | 23.33% |
| | ≤ 41 | 5 | 8.34% |
| Gender | Male | 26 | 43.33% |
| | Female | 34 | 56.67% |
| Educational level | School nurse | 10 | 16.66% |
| | Nursing Institute | 26 | 43.34% |
| | College of Nursing | 24 | 40% |
| Experience | 1-5 | 13 | 21.66% |
| | 6-10 | 71 | 28.34% |
| | 11-15 | 15 | 25% |
| | 16-20 | 15 | 25% |
| Have you participated in training courses | Yes | 24 | 40% |
| | No | 36 | 60% |

Table (1): Most of the nurses participating in the study were of the age of (35-31), with a percentage of about 33.33%. Likewise, women were more involved in the study 56.67%. While the highest

cultural level were graduates of nursing institutes 43.34%, Sixty percent of the sample did not have any training course specializing in blood transfusion among newborns.

Table (2): Nurses Knowledge Regarding Blood Exchange Transfusion in Neonatal Care Units

| Type of knowledge | Total score average | Evaluation |
|-----------------------------------------------------------------------|---------------------|------------|
| Nurses knowledge about neonatal jaundice | 3.233 | Poor |
| Nurses knowledge about blood exchange transfusion | 2.467 | Poor |
| Nurses knowledge about nursing care during blood exchange transfusion | 2.667 | Poor |

In this table (2) table show Nurses Knowledge Regarding Blood Exchange Transfusion in Neonatal Care Units was poor

Discussion:

These study show in table (1) the distribution the socio-demographic for research sample, The number of participants in this study is (60) nurses from the Mosul neonatal care units, Most of the nurses participating in the study were of the age of (31-35), with a percentage of about 33.33%. Likewise, women were more involved in the study 56.67%. While the highest cultural level were graduates of nursing institutes 43.34%, Sixty percent of the sample did not have any training course specializing in blood transfusion among newborns. This study agree with current study in Iran by ⁽⁸⁾ who stated that the female more than male in sample study. The second table was divided into 3 aspects for the purpose of testing the nurses' knowledge regarding each of the nurses' knowledge regarding jaundice, blood transfusion between newborns, and then their knowledge about nursing care. All of their knowledge was weak. The study conducted in India by ⁽⁹⁾. were agreement with this study Who stated that The findings of In experimental group mean post-test-1 Self-esteem score (16.10 ± 1.85) was higher than that of mean pre-test score (14.57 ± 2.09). Therefore, most nurses are under the pretext of conducting intensive training programs for the purpose of enhancing nurses' knowledge about congenital jaundice and

how to deal with this disease in newborns, and then improving their knowledge in the process of blood transfusion. In the event of a high percentage of bilirubin, the child needs a blood exchange operation.⁽¹⁰⁾ Nurses must have sufficient knowledge about the blood transfusion process. Finally, the nursing role must be effective in all of the above operations because the nurse is the first or last responsible for caring for newborns and following up on all medical and nursing procedures during and after the blood transfusion process.

Conclusion:

This study concluded that the knowledge of nurses who worked in pediatric care units regarding the blood transfusion process was very weak and poor, and the main reason is the lack of training courses dealing with this topic.

References:

1. Kumar P, Chawla D, Deorari A. Light-emitting diode phototherapy for unconjugated hyperbilirubinaemia in neonates. Cochrane Database of Systematic Reviews. 2011(12).
2. World Health Organization. Clinical management of severe acute respiratory infection (SARI) when COVID-19 disease is suspected: interim guidance, 13 March 2020. World Health Organization; 2020.
3. Pradhan R, Karn BK, Chaudhary R, Yadav U, Bhandari S. Perceived Hindering

- Factors of Exclusive Breastfeeding among Lactating Mothers of Itahari. Journal of College of Medical Sciences-Nepal. 2022 Nov 4;18(3):235-43.
4. Bura'a LN, Younis NM. Nurses knowledge regarding to phototherapy at neonatal care units in Mosul City, Iraq. Rawal Medical Journal. 2023 May 27;48(2):379-.
 5. Tulloch O, Roldan de Jong T, Bardosh K. Data synthesis: COVID-19 vaccine perceptions in Africa: social and behavioural science data, March 2020-March 2021.
 6. Bura'a LN, Younis NM. An Interventional Program on Nurses Knowledge and Practice towards Phototherapy in Neonatal Care Units. Int J Membrane Sci Technol. 2023 Jul 2;10(2):1428-32.
 7. Bura'a LN, Younis NM. Educational Program of Nurses Practices Towards to Phototherapy at Neonatal Care Units. Pakistan Journal of Medical & Health Sciences. 2023 Jun 9;17(04):530-.
 8. Abdollahi S, Acero F, Baldini L, Ballet J, Bastieri D, Bellazzini R, Berenji B, Berretta A, Bissaldi E, Blandford RD, Bloom E. Incremental Fermi large area telescope fourth source catalog. The Astrophysical Journal Supplement Series. 2022 Jun 30;260(2):53.
 9. Jain S, Sharma T. Social and travel lockdown impact considering coronavirus disease (COVID-19) on air quality in megacities of India: present benefits, future challenges and way forward. Aerosol and Air Quality Research. 2020 Jun;20(6):1222-36.
 10. Ali HA, Abbas FF, Younis NM. Mothers' knowledge and attitudes towards breastfeeding in Thi-Qar City, Iraq. Rawal Medical Journal. 2023 May 27;48(2):514-.