KNOWLEDGE OF NEONATAL JAUNDICE BY NURSING MOTHERS ATTENDING POST-NATAL CLINIC AT GOVERNMENT HEALTH FACILITIES IN OWERRI MUNICIPAL COUNCIL, IMO STATE NIGERIA.

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Abstract
Jaundice is one of the most common conditions needing medical attention in newborn babies. Jaundice may also be a sign of serious underlying illness this is why this study was designed to determine knowledge of neonatal jaundice by nursing mothers attending post-natal clinic at government health facilities in Owerri municipal council, Imo State Nigeria. The study adopted the survey research design; Owerri Municipal council was used as the study area. The population for this study consist of 200 registered nursing mothers who have experienced jaundice in one of their children or were currently experiencing jaundice. The population size was not large, no sampling was done. Reliability coefficients of 0.801 were obtained for the Test on knowledge of neonatal jaundice. Results includes; mean score shows that the level of knowledge on neonatal jaundice possessed by nursing mothers attending post-natal clinics is moderate; Nursing mothers in Owerri Municipal Council have moderate level of knowledge of neonatal jaundice across various parity levels. Conclusion and recommendations were made among others Regular health education of nursing mothers on the identification, causes, danger signs, complications, appropriate treatment procedures and the prompt step to take when neonatal jaundice is noticed should be made mandatory.

Introduction

The term “jaundice” was coined from a French word “jaune” meaning “yellow”. Jaundice is a condition due to an increased level of bilirubin in the blood of an infant resulting in liver disease. Bilirubin is a bile pigment that is formed from the breakdown of heme (a deep red iron containing blood pigment obtained from hemoglobin), mainly as a product of red blood cell degradation. If bilirubin cannot leave the body, it accumulates and discolours other tissues and results hyperbilirubinemia. The normal total level of bilirubin in the blood serum is 0.2mg/dL. When it rises to 3mg/dL or higher, the persons skin and the whites of the eyes become noticeably yellowish (Hicks, 2009).

Jaundice is one of the most common conditions needing medical attention in newborn babies. According to Demott, *et al*, (2009), jaundice may also be a sign of serious underlying illness. For instance, the acute bilirubin encephalopathy is the acute manifestations of bilirubin toxicity seen in the first weeks after birth. Approximately 60 percent of term and 80 percent of preterm babies develop jaundice in the first week of life, and about 10 percent of breastfed babies are still jaundiced at 1 month. Most of these cases are benign (they are not dangerous or malignant), but it is important to identify those babies at risk (although rare) of acute bilirubin (Canadian Paediatric Society, (CPS) 2017).

McDonald (2015) stated that there are two main types of jaundice. They are unconjugated or indirect jaundice which is also known as pathologic jaundice, and conjugated or direct jaundice which is also known as physiological jaundice. This pathologic jaundice is the one that manifest immediately or few minutes after the baby is born, it is noticeable and medical practioners take immediate action.

The physiologic / conjugated jaundice is the type of jaundice that manifest within 5 – 10 days and above. The physiologic or conjugated jaundice is the main focus of this study because as at the time of manifestation, the mother must have been discharged from the hospital and probably at home nursing the baby. The conjugation process of physiologic jaundice takes place in the liver, and produces a water-soluble conjugated bilirubin which is ready to be excreted from the body.

Physiologic jaundice is the common and normal type of jaundice in babies, it can affect upto 60 percent of full term babies in the first week of life. Physiologic jaundice is caused by a combination of increased bilibribin production, the destruction of erythrocytes and decreased

excretory capacity. The risk factors for physiologic/conjugated jaundice are genetics and familial risk, nutrition, maternal factor, birth weight, gestational age and congenital infections.

In newborn infants, jaundice can be detected by blanching the skin with digital pressure, revealing the underlying colour of the skin and subcutaneous tissue. The assessment of jaundice must be performed in a well-lit room or, preferably, in daylight at a window. Jaundice is usually seen first in the face and progresses gradually to the trunk and extremities, but visual estimation of bilirubin levels from the degree of jaundice can lead to errors (Bhutani, Johnson, Gourley and Adler 2010). In most infants with TSB levels of less than 15 mg/dL (257 μmol/L), noninvasive TCB measurement devices can provide a valid estimate of the TSB level (Ebbesen, Rasmussen & Wimberley 2012; Maisels & Ostrea 2014; Yasuda, Itoh, & Isobe 2013).

Severe neonatal jaundice represents perhaps the mostly disregarded cause of neonatal morbidity and mortality in the world, which accounts for 75 percent of hospital re-admission in the first week of life of most newborn babies (Olusanya, Ezeaka, Ajayi-Obe, Mukhtar-Yola, & Ofovwe, 2012). Neonatal jaundice and its complications still represent a major health challenge in many developing countries and contribute to infant deaths which have remained very high in Asia and Latin America (Zupan, 2015).

In sub-Saharan Africa, especially in Nigeria and Kenya, neonatal jaundice is a leading cause of death in newborn nurseries and is a major reason why infants are re-hospitalized. Efforts has been made by the ministry of health, hospitals and medical practitioners to create awareness on jaundice, its risk factors, health consequences and management procedures through seminars, workshops and health talks, but it seems that some nursing mothers do not have enough knowledge on jaundice.

The researcher witnessed four jaundice cases in three of her family relative, one of the cases was so severe that the newborn had to be treated and managed using exchange blood transfusion and phototherapy. In the end, the child was left paralyzed due to the adverse implication of chronic jaundice to the child's body.

The researcher observed that a lot of nursing mothers lack access to quality health care, a majority have their babies in community health centers, where many health workers lack adequate newborn care skills. Again, not all families can provide quality medical care for their newborn baby who had jaundice and may not be able to prevent the health consequences of jaundice which include cerebral palsy, mental retardation, congenital malformation, teeth problem, poor hearing and so on. All these health problems could be resolved or reduced if nursing mothers attend post-natal clinic and also if they put the knowledge they acquire into practice. The focus of this study is to determine the Knowledge of Neonatal Jaundice by Nursing Mothers Attending Post-natal clinic at Government Health Facilities in Owerri Municipal Council.

Purpose of Study

The main purpose of this study was to examine the knowledge of neonatal jaundice by nursing mothers attending post natal clinics at Government Health facilities in Imo State. Specifically, the study seeks to examine:

1. Level of knowledge of neonatal jaundice possessed by nursing mothers attending post natal clinics.
2. Differences in knowledge level on neonatal jaundice possessed by nursing mothers of different educational levels attending post natal clinics.

3. Differences in knowledge level on neonatal jaundice possessed by nursing mothers of various parity levels attending post natal clinics.

Research Questions

The following research questions guided the study:

1. What is the level of knowledge of neonatal jaundice possessed by nursing mothers attending post natal clinics?
2. What is the mean knowledge of neonatal jaundice possessed by nursing mothers of different educational levels attending post natal clinics?
3. What is the mean knowledge of neonatal jaundice as possessed by nursing mothers based on parity attending post natal clinics?

Hypotheses

The following hypotheses guided the study, and was be tested at 0.05 level of significance:

1. There is no significant difference in the mean knowledge scores of neonatal jaundice by nursing mothers of different educational levels of education attending post natal clinics.
2. There is no significant difference in the mean knowledge scores of neonatal jaundice by nursing mothers of various parity levels attending post natal clinics.

Methods

The study adopted the survey research design. Owerri Municipal council was used as the study area. It is one of the 27 local Government Areas in Imo State. The population for this study consist of 200 registered nursing mothers who have experienced jaundice in one of their children or is currently experiencing jaundice. These mothers were also attending post-natal clinics at Government Health Facilities (primary health centres and hospitals) in Owerri Municipal council of Imo State during the period of this study (post natal care register, 2018). The population size

is not large, no sampling was done. The reliability of the instrument was established through split half method. The Pearson product correlation coefficient was used to obtain the correlation coefficient f while Spearman- Brown Prophesy formula was used to convert the reliability of half test to reliability of full test. Reliability coefficients of 0.801 were obtained for the Test on knowledge of neonatal jaundice. The data collected from the field was analyzed using mean, standard deviation, frequencies, percentages, independent samples t-test, Analysis of Variance (ANOVA) and chi-square.

Results and Discussions

Research Question 1: What is the level of knowledge of neonatal jaundiced possessed by nursing mothers attending post-natal clinics?

Table 1. Mean score on knowledge of neonatal jaundice by nursing mothers attending post-natal clinics (N=150)

	Min.	Maxi.	Mean	SD	Remark
Level of knowledge of Neonatal Jaundice	8.00	23.00	14.89	3.01	**Moderate**

Table 1 show that the range of scores on knowledge of neonatal jaundice obtained by the nursing mothers was 8.00 to 23.00. While the mean score was 14.89, and the standard deviation was 3.01. The mean score shows that the level of knowledge on neonatal jaundice possessed by nursing mothers attending post-natal clinics was moderate.

Research Question 2: What is the difference in knowledge level of neonatal jaundice by nursing mothers of different educational levels attending post-natal clinics?

Table 2: Mean score of knowledge of neonatal jaundice by nursing mothers of different educational levels attending post-natal clinics

	Low Level of Education (n=73)			High Level of Education (n=77)		
	Mean	**SD**	**Remark**	**Mean**	**SD**	**Remark**
knowledge of neonatal jaundice	14.59	2.91	Moderate	15.18	3.10	Moderate

Table 3, shows that nursing mothers with low level of education had a mean score of 14.59 while those with high level of education had 15.18, the SD was 3.10. These mean scores indicate that the level of knowledge of neonatal jaundice for nursing mothers with low and high level of education is moderate. There was therefore no difference in the knowledge level of neonatal jaundice possessed by nursing mothers of different educational levels.

Research Question 3: What is the difference in knowledge level of neonatal jaundice of nursing mothers of various parity levels attending post-natal clinics?

Table 3: Mean score on level of knowledge of neonatal jaundice by nursing mothers of different parity attending post-natal clinics

Parity	N	Mean	SD	Remark
Once	10	15.40	2.17	Moderate
Twice	43	15.16	3.24	Moderate
3-5 Time	39	15.51	2.83	Moderate
6-8 Times	36	14.92	2.66	Moderate
9 times and above	22	13.00	3.22	Low

The analysis in Table 5 shows the mean scores on knowledge of neonatal jaundice by nursing mothers of different parity. Nursing mothers who had given birth once (mean=15.40; SD =2.17), twice (mean=15.16; SD= 3.24), 3-5 times (mean=15.5; SD = 2.83) and 6-8 times (mean=14.92; SD = 2.66) all had a moderate knowledge of neonatal jaundice. However, nursing mothers who had given birth 9times and above (mean=13.00; SD = 3.22) had low knowledge of neonatal jaundice. Although nursing mothers with only one birth had the highest mean score on knowledge of neonatal jaundice, they had the lowest standard deviation score while those with 9 births and above had the highest standard deviation considering their lower mean score. This suggests that mothers with just one birth are more homogenous in their individual scores than that with 9 births and above.

Hypothesis one: There will be no significant difference in the mean knowledge scores of neonatal jaundice by nursing mothers of different educational levels attending post-natal clinics.

Table 4: t-test comparison of mean knowledge of neonatal jaundice by nursing mothers of different education levels

Source of variation	N	Mean	SD	df	t-cal	*P*-val	Decision
Low Level of Education	73	14.59	2.91	148	1.21	.230	NS*
High Level of Education	77	15.18	3.10				

*Not Significant

The t-test analysis presented in table 7 shows that the calculated t-value of 1.21 has a corresponding *P*-value of .230. Since the *P*-value was greater than the stipulated 0.05 level of significance and degree of freedom (df) 148, it was decided that there is no significant difference in the mean knowledge of neonatal jaundice by nursing mothers of different educational levels.

The null hypothesis of no significant difference between the two groups was therefore not rejected.

Hypothesis two: There is no significant difference in the mean knowledge scores of neonatal jaundice by nursing mothers of various parity levels attending post-natal clinics.

Table 5: Analysis of variance on the mean knowledge of neonatal jaundice by nursing mothers of different parity

	Sum of Squares	**Df**	**Mean Square**	**F**	***P*-value**	***Decision***
Between Groups	1269.63	4	317.41	2.87.6	.02	S*
Within Groups	16004.516	145	110.38			
Total	17274.15	149				

*Significant

As observed in table 8, the F-ratio (df: 4/145) is 2.87.6 and the *P*-value (.02) was less than the stipulated 0.05 level of significance. It was therefore decided that there is a significant difference in difference in the mean knowledge of neonatal jaundice by nursing mothers of various parity levels. The null hypothesis was therefore rejected.

Discussion of the Findings

Knowledge of neonatal jaundice by nursing mothers attending post-natal clinics

From the result shown in Table 1, the mean scores indicate that the level of knowledge of neonatal jaundice for nursing mothers with low and high level of education is moderate. Their results showed a good knowledge in some aspect of jaundice but there are also some misconceptions, partial knowledge and poor knowledge in certain aspect of jaundice that must be focused. However, familiarity, awareness or understanding of neonatal jaundice is vital for

nursing mothers because if jaundice is left untreated and bilirubin levels reach limits exceeding 25mg, there is the probability of cerebral palsy, which may lead to certain forms of brain damages to occur. This result goes to show moderate knowledge of neonatal jaundice.

This is because neonatal jaundice is a common disorder worldwide and accounts for 75% of hospital re-admissions in the first week of life of most newborn babies, hence it is a cause of concern for both physician and parents. Moreover, neonatal jaundice and its complications still represent a major health challenge in many developing countries, and contribute to both neonatal mortality and morbidity which have remained very high in Sub-Saharan Africa, Asia, and Latin America (Zupan, 2015). This result collaborates with the findings of Alemu *et al* (2011) who assessed health workers knowledge, attitude and perception towards jaundice in Ethiopia. Their result showed that there is only partial knowledge about the manifestation of jaundice. Most respondents in this had positive perception towards jaundice and some have negative perception. The study recommended that education and training should be given to update the knowledge of the health workers.

On the test of hypothesis 1 and from the result as shown the statement of hypothesis 1 was not rejected. This implies that there is no significant difference in the mean knowledge of neonatal jaundice by nursing mothers of various educational levels. Thus, education and training should be given to update the knowledge of the nursing mothers irrespective of their level of education. This study therefore suggests the need to provide adequate access of maternal health services and more functional medical facilities to all the areas in Nigeria so as to take care of neonatal jaundice. It was therefore decided from hypothesis 2 that there is a significant difference in the mean knowledge of neonatal jaundice by nursing mothers of various parity levels. The null hypothesis was therefore rejected. There is a significant difference in the mean

knowledge of neonatal jaundice by nursing mothers who had given birth 3-5 times and those who had given birth 9 times and above. No significant difference was found in the mean knowledge of neonatal jaundice by nursing mothers of other parity levels. This is in agreement with the findings of Alemu *et al* (2011) who reported similar results. This by implication goes to show inconclusive result on the knowledge of neonatal jaundice by nursing mothers of various parity levels.

Conclusion

Based on the findings of the study, it was concluded that the level of knowledge of neonatal jaundice by nursing mothers is moderate. Level of education significantly influences the knowledge of neonatal jaundice by nursing mothers, while parity significantly influence the knowledge of neonatal jaundice by nursing mothers. It means that level of education is not a serious moderating variable in the knowledge of neonatal jaundice while parity is a serious factor to be considered.

Recommendations

Based on the findings of the study, the following recommendations are made:

1. Regular health education of nursing mothers on the identification, causes, danger signs, complications, appropriate treatment procedures and the prompt step to take when neonatal jaundice is noticed should be made mandatory.
2. Government and policy makers should make necessary provision for quality care on maternal and child health issues. They should also provide equipment or possibly improvise alternative equipment to counter the negative effects of neonatal jaundice. This would make way for improved management procedures and efficient post-natal health care services.

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