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A Case Study on Health-Seeking Behaviors Among Caregivers of Neonatal Jaundice Children and Health System Factors that Influence Such Behaviors

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ABSTRACT

Neonatal jaundice is a major cause of illness in infants, especially in low- and middle-income countries. This study evaluated the factors affecting the healthcare-seeking behavior of mothers and newborns with hyperglycaemia at the Cape Coast Teaching Hospital (CCTH) in Ghana. Under the Methodology, A cross-sectional study design was adopted. Mothers and newborns admitted for hyperglycaemia from January to December 2023 were recruited (n = 250). Data were collected using a structured questionnaire, and Legit regression analysis was used to identify predictors of delayed healthcare seeking (≥48 hours after jaundice onset). Results: Among the 250 participants, 62% were aged between 20 and 29 years, 78% had received at least primary education, and 54% reported household income below the national average.

In general, 68% of newborns arrive at the hospital more than 48 hours after birth. The main factors predicting delayed hospital consultation are as follows: low maternal education level (OR = 1.92; 95% CI 1.45–2.55), lack of prior knowledge of the severity of severe jaundice (OR = 1.78; 95% CI 1.32–2.40), and distance to the hospital greater than 10 kilometers (OR = 1.65; 95% CI 1.22–2.23). In this context, the delay in seeking healthcare is significant. It is associated with low maternal education, limited awareness of the severity of severe jaundice, and greater distance from the healthcare facility. Specific education and means of transportation are needed to reduce the delay in hospital access and the associated risks.

Keywords: *healthcare, health system, behavior. Practices, neonatal jaundice, and caregivers*

I. Introduction

Every year, nearly 10.8 million children under the age of five years die worldwide (United Nations Inter-Agency Group for Child Mortality Estimation, 2015). Approximately 38% of these deaths occur in the first month of life. (United Nations Inter-Agency Group for Child Mortality Estimation, 2015). In Sub-Saharan Africa and Southern Asia, neonatal deaths account for almost 90% of all global infant mortality (United Nations Inter-Agency Group for Child Mortality Estimation, 2015). South Asia and Sub-Saharan Africa not only have the highest infant and child mortality rates in the world, but they also have the highest proportion of developmentally disadvantaged children (Nkrumah, 2016). In resource-limited settings, jaundice is among the chief causes of neonatal admission and deaths (Kokeb & Desta, 2016). Severe NJ causes acute bilirubin encephalopathy or kernicterus, which increases the risk of neonatal mortality and long-term neurologic damage, including cerebral palsy, sensory neural hearing loss, intellectual difficulties, or gross developmental delays (Slusher et al., 2017). Global child health initiatives have focused exclusively on curbing the under-five mortality rate, which is an important measure of population health (Unite for Children, 2013). According to UNICEF (2011), Newborn mortality is significantly impacted by severe or clinically significant neonatal jaundice, which frequently necessitates phototherapy or exchange blood transfusions. Neonatal jaundice is a main reason for hospital admission or readmission in the first week of life (Onyearugha, Onyire, & Ugboma, 2011). The burden is likely to be much higher in Africa, South Asia, and the Middle East, where Glucose-6-Phosphate Dehydrogenase (G6PD) deficiency is common (Slusher, Angyo, Bode-Thomas, McLaren, & Wong, 2014). This trend is not different in Ghana. A study conducted in Ghana by Adoba et al. (2018) on the knowledge and determinants of neonatal jaundice discovered that the prevalence of neonatal jaundice was 66.7%. Nonetheless, NJ remains one of the leading causes of neonatal mortality. Another study done by Nauzley and Abedini in 2013 at the mother's baby unit (MBU) at the Okomfo

Anokye Teaching Hospital in Kumasi, Ghana, recorded neonatal jaundice as the second most common diagnosis for neonatal admissions. Nkrumah (2016) revealed a mortality rate of 8.6% as a result of kernicterus at Korle Bu teaching hospital in Accra. In Cape Coast Teaching Hospital in Ghana, NJ was the fifth most common cause of admission and the seventh most common cause of death in 2017, 2018, and 2019 (Cape Coast Teaching Hospital, 2020). Ghana's efforts to reach the worldwide neonatal death reduction targets and the World Health Organization (WHO) targets of 12 and 7 per 1000 live births by 2030 and 2035, respectively, are undermined by the prevalence of infant mortality owing to jaundice (Salia et al., 2021). One of the measures of reducing neonatal morbidity and mortality is the early detection of neonatal jaundice for prompt treatment with phototherapy or exchange blood transfusion. Despite the high neonatal mortality resulting from NJ recorded in Cape Coast Teaching Hospital, little data exists on the health-seeking behaviors of mothers who have babies with NJ. The study sought to determine the factors that influence the health-seeking behaviors of mothers of babies with NJ at Cape Coast Teaching Hospital in Ghana to provide evidence for planning intervention. The significance of good knowledge in the recognition or detection of jaundice by mothers is very important, as it gives mothers the needed and appropriate approach towards seeking prompt treatment in the hospital to avoid further complications. Moreover, a good knowledge of NJ by mothers in recognizing the cause of jaundice is a sign that mothers will likely take measures to prevent it and find immediate treatment. The results obtained from this study revealed that a significant proportion of the mothers had appropriate knowledge about the causes of NJ. This finding is in contrast with previous studies carried out in Iraq (Olusanya et al., 2015), Nigeria, and Pakistan (Greco, Arnolda, Boo, Iskander, Okolo, Rohsiswatmo, et al., 2016), which demonstrated that poor knowledge was dominant among mothers. The difference in knowledge levels between previous studies could be attributed to the urban, hospital-based study population in the cited studies, as attendees of metropolitan hospitals are more likely to be better educated and have more media access. Some of these variances could be explained by differences in health literacy, research populations, cultural practices, methodology, and currencies. Furthermore, the poor knowledge of mothers regarding NJ from previous studies may be attributed to the fact that information acquired on the issue of NJ is not enough to produce an acceptable level of knowledge among mothers on the causes of NJ, in addition to a generally low level of health literacy among mothers. Regarding the cause of neonatal jaundice, it was revealed from the study that a significant proportion of the mothers identified infection (71.0%), feto-maternal ABO/ rhesus incompatibility (48.4%), prematurity (43.0%), and poor maternal feeding (43.0%) as the major causes, which reflects good knowledge. Similar findings have been widely documented by several researchers (Slusher, Angyo, Bode-Thomas, McLaren, & Wong, 2014). In their study, a major cause of hyperbilirubinemia in neonates, ABO and Rhesus incompatibility inherited from the parents, was identified. Additional study conducted in Asia recorded ABO and Rhesus incompatibility as the leading cause of NJ (Bolajoko, Folasade, Tina, & Waldemar, 2015), and it is also higher than 35.5%, findings from the case-control study from ABO and Rhesus incompatibility in India (Adoba et al., 2018), but lower compared to (75%) with 74.1% of mothers with awareness of knowing the causes of neonatal jaundice in Goodman et al. studies cited in (Adoba et al., 2018). Opposing this, other studies reported some knowledge gaps 73% of the mothers indicated that they do not know the causes of the neonatal jaundice (Salia et al., 2021). In a study done by Seneadza and others (Seneadza, et al., 2022) in assessing Ghanaian children on neonatal jaundice by on maternal knowledge attitude and perception, shows that none of the mothers have understanding about G6PD one of the causes of neonatal jaundice and about 24.4% and 3.8% also wrongly identified the consumption of much oil and mosquitoes bites and bad spirit as the causes of neonatal jaundice, with more than 90% of the mother assessing antenatal clinic (ANC) (Seneadza, et al., 2022). The (43.0%) prematurity outcome from this study is higher than the 10% causes of the neonatal jaundice study done at Winneba in the Effutu Municipality of Ghana, and this may be the fact that Cape Cost Teaching Hospital is the biggest and a referral center for the Central and the Western region and also an urban hospital with the mothers likely to be better-educated and have more media access. It has been shown that preterm neonates are more vulnerable to neonatal jaundice, neurotoxicity, and neonatal death in a clinical trial study done by then termed neonates due to the immature liver, and the process leading to its conjugation may be facing challenges, which may lead to an increased amount of the unconjugated bilirubin in the blood (Greco et al., 2016). Exposure to substances such as menthol, sulfisoxazole acetyl, naphthalene ball (camphor) from the study recorded (35.5%) was a matter of concern, since there is established evidence that 15% to 20% of the Ghanaian population have G6PD (Olusanya et al., 2016) with hyperbilirubinemia and associated with evidence of some mothers in the community still use naphthalene balls (GDHS, 2014). The Common signs and symptoms of neonatal jaundice reported by mothers were lethargy (51.6%) and poor feeding (47.3%). Only 7 (7.5%) knew of yellowish eyes, skin, sclera, and mucous membranes. The greater proportion reported to the hospital or for orthodox treatment within 1-3 days (50%), while a significant number reported within 1 day (43.8%) of identifying the neonatal jaundice, either by self-identification, husband, or health worker, showing that if respondents can identify the signs and symptoms, they will seek the appropriate health care. Lower level of the identification of yellowing of the eyes, skin, sclera and the mucous membranes for the early detention and immediate management was an issue of concern, the results indicates that mothers see the condition to be treatable and will seek care if only identified,

this lower level of knowledge in this study in the teaching hospital an as referral center was surprising but with the impression of seeking health care if only identified was inspiring.

Methodology and research Design

A cross-sectional study was conducted at the Pediatrics Unit of Cape Coast Teaching Hospital (CCTH) in the Central Region of Ghana. Eligible participants were parents of infants (≥18 years old) who were identified with newborns (≤28 days) having hyperbilirubinemia, and the admission period was from January 1, 2023, to December 31, 2023. Exclusion criteria included parents of infants suffering from congenital liver disease, or infants discharged from other health facilities after ≥48 hours since the onset of jaundice. During the study, research assistants checked admission records daily and then contacted eligible parents in the ward. After confirming eligibility, the assistant would explain the purpose of the study. Procedures and measures for protecting privacy. Written informed consent was obtained before participation. A convenience sampling method was used: all eligible mothers who agreed to participate within 12 months were invited, until the required number of 250 samples was reached. Data collection was carried out using a pre-tested questionnaire, administered by interviewers, covering social and community characteristics, knowledge of neonatal jaundice, and health-seeking behaviors (from the onset of symptoms to medical consultation). Ethical approval from the research committee of the University of Cape Coast (IRB No. UCC-2022-045) as well as approval from the ethics committee of CCTH hospital were obtained. Participation in the study was voluntary, and participants could withdraw at any time without affecting the care of their baby.

II. Results interpretation

2.1 mothers of neonates diagnosed with neonatal jaundice with inappropriate health-seeking behavior,

On treatment, the majority identified feeding/hydration (53.8%) and phototherapy (50.5%). Participants likewise have appropriate knowledge through the identification of phototherapy and exchange blood transfusion as the mode of treatment. But Sun bath (48.4%) and **"**home treatment with local herb medications" (78.5%) were inappropriate. The present result is simile to Bolajoko and co-eques (2015) study on the part of the mother's knowledge regarding treatment of neonatal jaundice in lower middle-income countries and Baskabadi, Maamouri, & Mafinejad, (2011) study in Iran on the part of the mother's knowledge regarding treatment of neonatal jaundice in lower middle-income countries, found that the mother who practice herbal preparations may lead to delay in diagnosis and treatment with its related complications. The delay in taking the neonate to the hospital for prompt and appropriate treatment was due to the belief that the herbal preparation would resolve jaundice, which, in this case, causes more harm (Baskabadi, Maamouri, & Mafinejad, 2011). Also, the use of sunbathing to resolve jaundice increases the risk of retina damage and other complications that need to be avoided through intense community and antenatal education (WHO, 2013). Neonatal jaundice is most effectively managed with the use of phototherapy and exchange blood transfusion when treatment is started on time without complications (Bolajoko, Folasade, Tina, & Waldemar, 2015). On the part of the mother's knowledge concerning complications of neonatal jaundice, the majority cited the death of a baby (81.7%, 76/93) and cerebral palsy (65.6%) as complications of jaundice. An equal proportion of the caregivers (36.6%) noted mental retardation and sensorineural hearing loss to be complications of the neonatal jaundice. This current finding is higher than the findings of 7.8%, 55.1%, and 71% reported in Nigeria and Malaysia studies, respectively. (Salia et al., 2021). Complete bilirubin and encephalopathy or kernicterus. Permanent damage may lead to cerebral palsy, learning difficulties, deafness, intellectual impairment, sensory hearing loss, gross developmental delays, poor muscle tone, and enamel hypoplasia. When the condition of the child does not improve with time, the life of the neonate may be lost eventually (Greco et al., 2016).

2.2 Cultural, social -demographic, and health system factors that influence the health-seeking behaviors of caregivers of neonates with neonatal jaundice

The attitude, beliefs, and perceptions of mothers towards neonatal jaundice are shown in Table 6. Majority (47.3%) of the respondents agreed that negative attitude of health care providers discourages them from accessing health, 46.2% agreed distance to health facility discourages healthcare accessibility, Concerning practice care givers responding unenviably for example significant proportion (39.8%) cited that neonatal jaundice can be caused by spiritual eyes, and the use of herbal preparation as treatment which in turn delayed care as well as drooping breast milk on the eyes, drop sea water on the eyes as the means of cure of the neonatal jaundice. On the other hand, a significant proportion (39.8%) cited that neonatal jaundice can be caused by spiritual eyes. Commonest management practices were **"**home treatment with local herb medications" (78.5%), while a significant proportion performed "no management at home". The summary of KAP scores of mothers is presented in Figure 4. Most of the mothers had inappropriate knowledge (79.6%), attitude (50.5%), and practice (80.6%) regarding neonatal jaundice. Only a few were found to have adequate knowledge (20.4%) and practice (19.4%)

towards neonatal jaundice, while nearly half of the respondents (49.5%) had adequate attitude. The factors associated with caregivers' knowledge of neonatal jaundice.

2.0 Socio-demographic, health system factors that influence the health-seeking behaviors of caregivers of neonates with neonatal jaundice

Generally, a greater proportion of the respondents in the levels of socio-demographic factors had inadequate knowledge. However, higher education status (diploma-36.8% and tertiary-39.1%) and full-time employment (39.4%) improve the proportion of respondents with adequate knowledge. The Knowledge level of mothers was significantly associated with education (p=0.005) and Employed status (p=0.008). Even with a high degree of education, incorrect knowledge could be attributed to a lack of health literacy. Using the guidelines supplied by the Ministry of Health, GHS, healthcare professionals should work together to educate mothers about neonatal jaundice during ANC visits. Attitude, beliefs, and perception towards neonatal jaundice. Respondents agreed that the negative attitude of health care providers discourages them from accessing health, 46.2% agreed that distance to health facility discourages healthcare accessibility, and 59.1% were of the view that cost of health care prevents them from accessing healthcare. From the study, almost half of the study participants claimed they could recognize neonatal jaundice by checking for the yellowish discoloration of the eyes after a few days of delivery, 1-2 days (37%), and 3-4 days (39.7%). It can be inferred that mothers in this study had appropriate care-seeking behavior for their neonates with NJ and largely preferred hospital services for treating neonatal jaundice, which is an indication of a positive attitude, as it will lead to early detection, correct diagnosis, and prompt treatment. Hospitals, traditional healers, cultural customs, and health care facilities were among the techniques studied. The preference for hospital care may be attributed to the chance to educate women on the prevention and management of newborn jaundice, or to rely on the abilities of government hospital staff to handle jaundice rather than self-treatment and traditional remedies. This result agrees with Goldman & Heuveline, who revealed in their study that mothers were more enthusiastic to pursue medical care for jaundice. With good knowledge, most of the mothers in this group appreciated the need to seek effective care early enough. Even though mothers had appropriate care-seeking behaviour and a fair knowledge about NJ but have a poor attitude towards NJ treatment and management. Mothers in this study had a fair knowledge of NJ and could detect NJ within a few days. Despite the high literacy level of mothers in this study, it was revealed that some mothers (78%) reported still using traditional (home remedies) and potentially harmful therapies as first aid intervention for management of NJ before reporting to a health facility. These results agreed with the findings revealed by previous studies carried out in Iraq (Abdul-Aziz, 2015), Turkey (Özyazıcıoğlu & Polat, 2014), and Vietnam (Magfouri et al., 2019). In his study in Uganda, Musoke, Boynton, Butler, and Musoke (2014) discovered that few patients use the services of traditional healers. The mothers in this research employ traditional healers or home remedies because they believe their methods and treatments are more effective and better for them, and so do not see the value in traveling to the hospital straight away. According to Le et al. (2014, the use of alternative therapy, specific cultural customs, and inadequate maternal understanding may prevent the discovery or pursuit of care for jaundice situations. Also, traditional practices used by mothers in the management of NJ represent a potential barrier for seeking care, sometimes cause harm to children, and result in increased bilirubin admission levels. In a similar study in Iran, Boskabadi and Navaei (2011) discovered that these medications were administered to newborns who had a greater likelihood of developing complications from hyperbilirubinemia. Therefore, health education on the issue of NJ must put emphasis on the necessity for mothers to take affected children to hospitals for prompt management (Baskabadi, Maamouri, & Mafinejad, 2011). Furthermore, it was found from this study that when mothers can detect NJ, they are more likely to seek aid rather than waiting until the condition totally degenerates. Again, this demonstrates the mothers' lack of discernment on neonatal jaundice and the necessity to rectify such lapses. Taffa and Chepngeno (2005) stated in their remark that mothers delay seeking health care till the problem worsens.

III. Discussion Of Results

3.1 Management practices of caregivers regarding neonatal jaundice

Commonest management practices were "home treatment with local herb medications" (78.5%, 73/93) while a significant proportion either performed "no management at home" (53.8%, 50/93) or "immediately reported to the health facility" (33.3%, 31/93) (Table 7). Proportion of mothers of neonates diagnosed with neonatal jaundice who have inappropriate health-seeking behavior. Five questions with binary responses were used in measuring the health-seeking behavior of mothers of neonates diagnosed with neonatal jaundice. Desired response was scored as 1 and undesired response as 0. Total scores were computed, and a cumulative score of 50% and above was considered to be appropriate health-seeking behavior, and a score below 50% was considered to be inappropriate health-seeking behavior. Figure 5 shows the levels of health-seeking behavior of mothers of neonates diagnosed with neonatal jaundice. It could be observed that the majority (71%) of the mothers had inappropriate health-seeking behavior. Only 29% of mothers had inappropriate health-seeking behavior.

Practices	Correct response	
	Number (n)	Percentage (%)
Home treatment with local herbal medications	73	78.5
Certain cultural practices	8	8.6
The elders in the family, particularly the mother-in-law, give treatment	14	15.1
No management at home	50	53.8
Immediately reported to the health facility	31	33.3

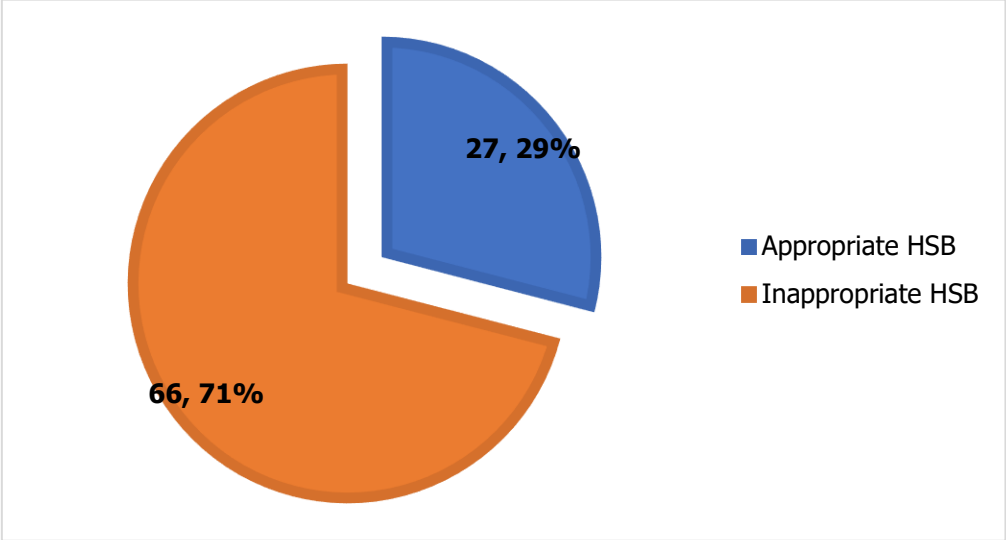

Figure 2. Shows the levels of health-seeking behavior (HSB) of mothers of neonates diagnosed with neonatal jaundice

3.2 Health-seeking Behavior and Health System Factors

Figure 2 shows the time respondents first notice the yellow eyes and skin following delivery. A total of 73 caregivers responded to this question, almost an equal proportion indicated 1-2 days (37%, 27/73) and 3-4 days (39.7%, 29/73).

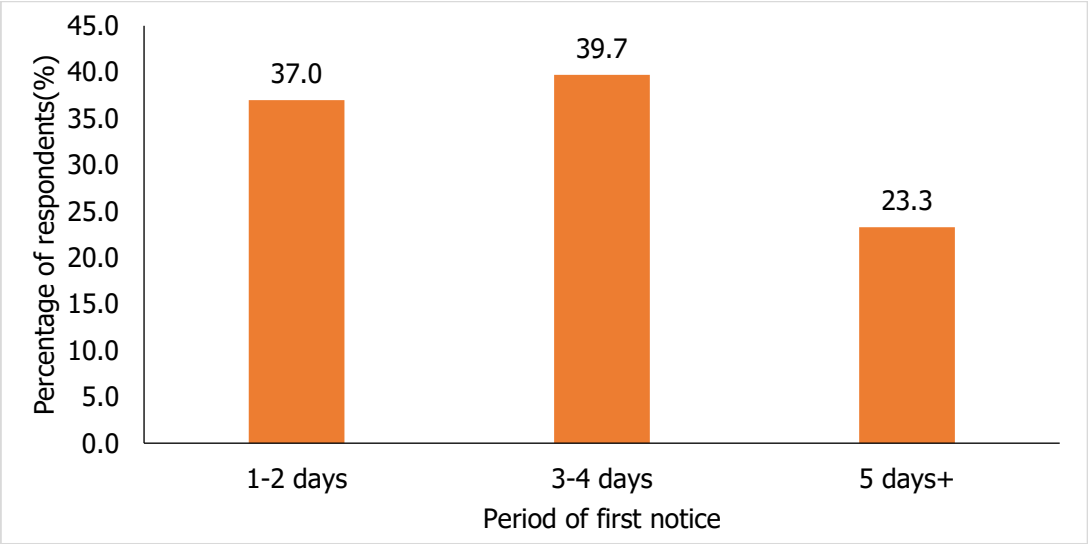

Figure 3. Time respondents first notice the yellow eyes after delivery

Figure 3 shows the time respondents first reported child neonatal jaundice to a health facility. A total of 80 caregivers responded to this question; a greater proportion indicated 1-3 days (50%, 40/80), while a significant number reported within 1 day (43.8%, 35/80) of identifying the child's condition.

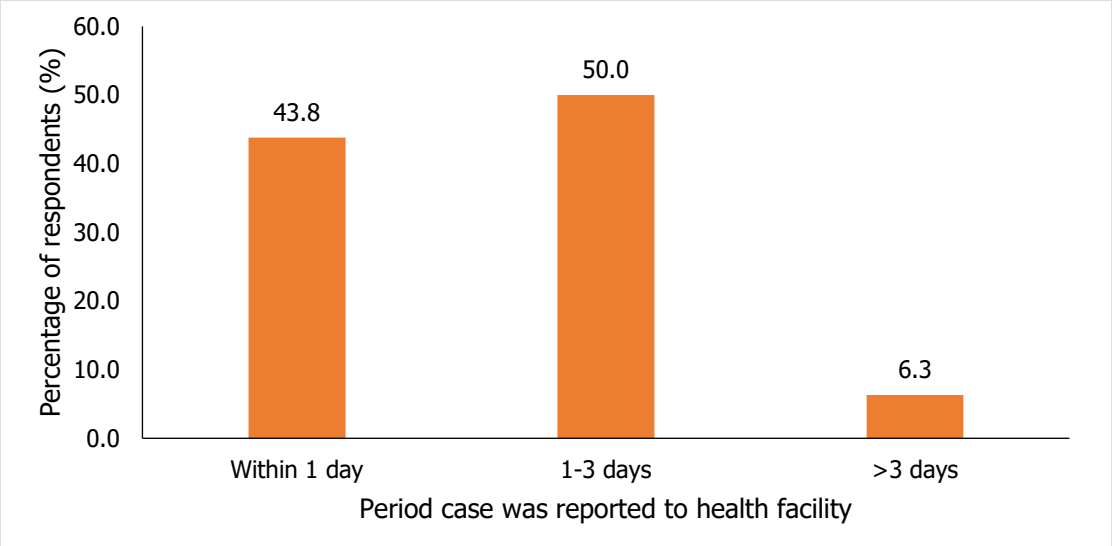

Figure 4 shows the time respondents first reported child neonatal jaundice to a health facility.

The source of caregivers' influence to seek healthcare for a child with neonatal jaundice is shown in Figure 4. Of 93 caregivers, 68.8% (64/93) visited a health facility without any advice, while significant proportions were influenced by husbands (46.2%, 43/93), health workers (34.4%, 32/93), and mothers (28%, 26/93).

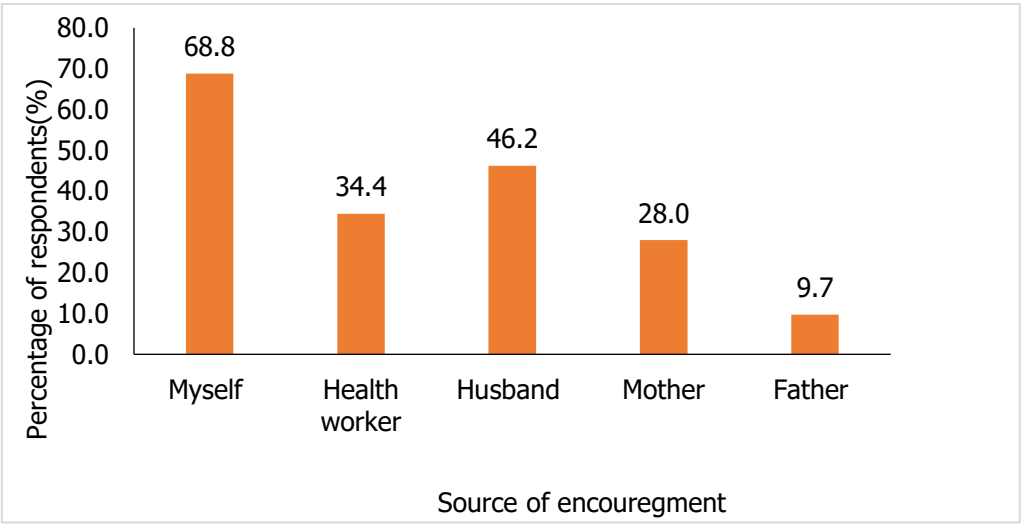

Figure 5 shows the distribution of respondents by source of influence to seek healthcare for a child with neonatal jaundice.

Table 8 illustrates the health-seeking behavior and health system factors among respondents. Most of the caregivers (96.8%, 90/93) indicated they were able to access healthcare when needed, with public transport (68.8%, 64/93) being the most common mode of transport to the health facility. Moreover, 81.7% (76/93) of the caregivers spent much time (average of 3 hours) at the health facility, but the majority (78.9%, 60/76) cited that the time spent did not discourage them from subsequent visits to the health facility. On the attitude of healthcare providers, 74.2% (69/93) revealed their child was ill-treated by a healthcare provider. However, 87% (60/69) of them indicated this ill-treatment did not discourage them from subsequent visits to the health facility. A greater proportion (94.6%, 88/93) of the caregivers had health insurance (NHIS or private) for their wards. However, 69.9% (65/93) paid for health services and found no problem making payment for health services.

Table 1: Health-seeking Behaviors and Health System Factors

Variable	Number (n)	Percentage (%)
Access to healthcare when needed		
Yes	90	96.8
No	3	3.2
Mode of the previous visit to the health facility		
Used public transport	64	68.8
Used private Vehicle	21	22.6
Walked	8	8.6
Was travelling to the health Centre a problem		
Yes	13	14.0
No	80	86.0
Delay at the health facility		
Yes	76	81.7
No	17	18.3
If YES, delay as a source of discouragement (n=76)		
Yes	16	21.1
No	60	78.9
Time spent at the health facility		
20-60 minutes	16	17.2
1-3 hours	21	22.6
>3 hours	56	60.2
Ill-treated by a healthcare provider		
Yes	69	74.2
No	24	25.8
If YES, ill-treatment discourages the caregiver (n=69)		
Yes	9	13.0
No	60	87.0
Payment for the health service		
Yes	65	69.9
No	28	30.1
Was payment for health expenses a problem for you		
Yes	28	30.1
No	65	69.9
Possession of NHIS or other private insurance		
Yes	88	94.6
No	5	5.4

3.3 Knowledge, attitude, and practice (KAP) analysis

On Knowledge, a total of 27 items on knowledge of causes (7), clinical manifestations and danger signs (6), treatment and management (6), and complications (8). Twelve (12) questions or items attitude with responses ranked on a five-point Likert scale with appropriate descriptions as: 1 = "Strongly disagree", 2 = "Disagree", 3 = "Undecided", 4 = "Agree", and 5 = "Strongly disagree". These were reclassified into two responses for the purpose of analysis: correct response and wrong response. In practice, five (5) items were used to gather information on caregivers' management practices regarding neonatal jaundice.

The overall level of KAP was assessed using scoring responses and classed as adequate or inadequate. A '1' was assigned if respondents answered correctly in knowledge, attitude, and practice, and a '0' if they answered incorrectly in knowledge, attitude, and practice. Total scores were tallied, and a total score of 50% or higher was regarded as adequate, while a score of less than 50% was judged inadequate. Knowledge, attitude, and practice were coded as 0 for "inadequate" and 1 for "adequate".

3.4 Knowledge, attitude, and practice of caregivers on neonatal jaundice.

The summary of KAP scores of caregivers is presented in Figure 5. Most of the caregivers had inadequate knowledge (79.6%, 74/93), attitude (50.5%, 47/93), and practice (80.6%, 75/93) regarding neonatal jaundice. Only a few were found to have adequate knowledge (20.4%, 46/93) and practice (19.4%, 18/93) towards neonatal jaundice, while nearly half of the respondents (49.5%, 46/93) had adequate attitude.

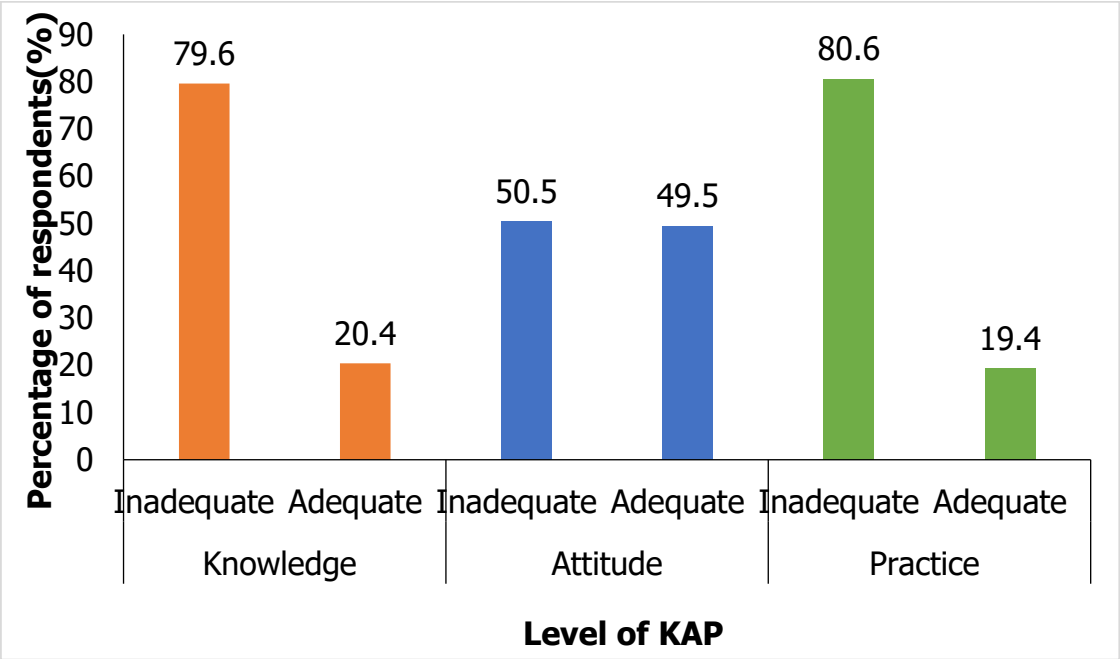

Figure 6. Levels of knowledge, attitude, and practice of respondents

As shown in Table 9, there was a significant positive correlation between knowledge and attitude (r=0.27, p=0.009), and practice (r=0.34, p=0.001), but none was observed between attitude and practice (r=0.05, p=0.656)

Table 2: Pearson Correlation analysis of knowledge, attitude, and practice scores

Correlation	Knowledge r (p-value)	Attitude r (p-value)	Practice r (p-value)
knowledge	1	0.27 (0.009) **	0.34 (0.001) **
Attitude	0.27 (0.009) **	1	0.05 (0.656)
Practice	0.34 (0.001)**	0.05 (0.656)	1

r-correlation coefficient, ** indicates correlation is significant at P<0.01

3.5. Factors associated with caregivers' knowledge of neonatal jaundice

Table 10 summarizes the factors associated with caregivers' knowledge of neonatal jaundice. Generally, a greater proportion of the respondents in the levels of socio-demographic factors had inadequate knowledge. However, higher education status (diploma-36.8% and tertiary-39.1%) and full-time employment (39.4%)

improve the proportion of respondents with adequate knowledge. The knowledge level of caregivers was significantly associated with education (p=0.005) and employed status (p=0.008).

Table 3: Factors associated with caregivers' knowledge of neonatal jaundice

Variable	Knowledge level		Fisher's exact test
	Adequate	Inadequate	p-value
Age group (years)			
<20	1 (8.3)	11 (91.7)	0.600
20-29	9 (23.1)	30 (76.9)	
30-39	9 (22.5)	31 (77.5)	
40-49	0 (0.0)	2 (100.0)	
Education			
None	0 (0.0)	7 (100.0)	0.005**
Primary	1 (8.3)	11 (91.7)	
Secondary	2 (6.3)	30 (93.8)	
Diploma	7 (36.8)	12 (63.2)	
Tertiary	9 (39.1)	14 (60.9)	
Marital status			
Single	4 (25.0)	12 (75.0)	0.273
Married	15 (23.4)	49 (76.6)	
Separated/Divorced	0 (0.0)	3 (100.0)	
Co-habiting	0 (0.0)	10 (100.0)	
Employed status			
Full-time employment	13 (39.4)	20 (60.6)	0.008**
Part-time employment	0 (0.0)	3 (100.0)	
Self-employed	5 (9.6)	47 (90.4)	
Unemployed	1 (20.0)	4 (80.0)	
Access to healthcare when needed			
Yes	17 (18.9)	73 (81.1)	0.105
No	2 (66.7)	1 (33.3)	
Mode of the previous visit to the health facility			
Used public transport	11 (17.2)	53 (82.8)	0.503
Used private Vehicle	6 (28.6)	15 (71.4)	
Walked	2 (25.0)	6 (75.0)	
Possession of NHIS or other insurance			
Yes	17 19.3)	71 (80.7)	0.269
No	2 (40.0)	3 (60.0)	

** Indicates association is significant at P<0.05

3.5.2 Factors associated with caregivers' management practice towards neonatal jaundice

The factors associated with caregivers' management practices towards neonatal jaundice are summarized in Table 12. There was no statistically significant association between caregivers' management practices towards neonatal jaundice and the socio-demographic factors considered.

Table 4: Factors associated with caregivers' management practice towards neonatal jaundice

Variable	Practice level		Fischer's Exact test
	Adequate	Inadequate	P-value
Age group (years)			
<20	0 (0.0)	12 (100.0)	0.266
20-29	9 (23.1)	30 (76.9)	
30-39	9 (22.5)	31 (77.5)	
40-49	0 (0.0)	2 (100.0)	
Education			
None	0 (0.0)	7 (100.0)	0.347
Primary	1 (8.3)	11 (91.7)	

Secondary	6 (18.8)	26 (81.3)	
Diploma	4 (21.1)	15 (78.9)	
Tertiary	7 (30.4)	16 (69.6)	
Marital status			
Single	2 (12.5)	14 (87.5)	0.268
Married	15 (23.4)	49 (76.6)	
Separated/Divorced	1 (33.3)	2 (66.7)	
Co-habiting	0 (0.0)	10 (100.0)	
Employed status			
Full-time employment	9 (27.3)	24 (72.7)	0.462
Part-time employment	0 (0.0)	3 (100.0)	
Self-employed	8 (15.4)	44 (84.6)	
Unemployed	1 (20.0)	4 (80.0)	
Access to healthcare when needed			
Yes	16 (17.8)	74 (82.2)	0.095
No	2 (66.7)	1 (33.3)	
Mode of the previous visit to the health facility			
Used public transport	11 (17.2)	53 (82.8)	0.732
Used private Vehicle	5 (23.8)	16 (76.2)	
Walked	2 (25.0)	6 (75.0)	
Possession of NHIS or other insurance			
Yes	17 (19.3)	71 (80.7)	1.000
No	1 (20.0)	4 (80.0)	

6.2 Conclusions

This study was conducted to assess the level of knowledge, perceptions, and practices of caregivers on neonatal jaundice. The study was carried out using Cape Coast Teaching Hospital as the case study with a sampling population of 93 caregivers. The study revealed that there is inadequate knowledge on the identification of causes, signs, and symptoms of neonatal jaundice.

On the general knowledge of the caregivers, the study participants reviewed appropriately infections (71%), feto-maternal ABO or rhesus incompatibility (48.4%), and prematurity (43.0%) as the main causes of neonatal jaundice. It was detected that the knowledge level of caregivers was significantly associated with education and employment status. The deprived knowledge could also be due to insufficient health literacy, even amid a high level of education.

The study reveals that mothers with high level of education understand the neonatal jaundice causes and management practices and easily identify the signs and symptoms unlike the low lever educated once hence pictures should be used in the child health record books and pictorial posters at the ANC as well as videos to explain these management practices to helpful the low lever educated mothers to better identify the signs and symptoms and understand the management practices. The Paediatric nurses and midwives should be able to conduct baby checks at the delivery ward and at the ANC for early identification and prompt management to prevent delay and promote early detection of the disease.

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