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Research Article

Umbilical Cord Care Practice by Mothers Attending Selected Primary Health Care Centres in Emekuku, Imo State

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Abstract

Inadequate umbilical cord care puts newborns at risk for infections that greatly increase neonatal morbidity and death, especially in places with limited resources. For this reason, umbilical cord care is an essential part of neonatal health. In many rural communities, dangerous traditional techniques of cord care are still widely used, despite international recommendations that support evidence-based treatments.The practice of umbilical cord care was evaluated in this study among mothers who visited particular primary health care facilities in Emekuku, Imo State. Using a descriptive cross-sectional study design, 162 mothers of infants ages 0–12 weeks participated. Systematic sampling was used to choose the participants. A verified, structured questionnaire covering cord care procedures was used to gather data. SPSS version 25 was used to analyse the data. Just 66.2% of respondents correctly recognised the symptoms of an umbilical cord infection, despite the fact that 79.5% had heard of umbilical cord care. Of the mothers, 59.6% were found to be properly adhering to suggested cord care methods. While 36.8% of respondents continued to use methylated spirit, 42.3% of respondents employed traditional items like herbs and ashes. Compared to mothers who gave birth at home (47.2%), mothers who gave birth in medical facilities exhibited noticeably superior cord care habits (82.5%). The location of delivery and compliance with advised cord care procedures were found to be statistically significantly correlated. Mothers in Emekuku continue to engage in risky behaviours despite a comparatively high level of understanding on umbilical cord care. Improving newborn outcomes requires bolstering maternal education, encouraging facility-based deliveries, and incorporating community-based interventions with primary health care services.

Keywords: *Umbilical cord care, neonatal health, maternal practices, primary health care, Nigeria.*

INTRODUCTION

Neonatal mortality is still a significant global public health issue, especially in low- and middle-income nations where a significant percentage of neonatal deaths are caused by avoidable illnesses. According to WHO estimates, diseases like sepsis, tetanus, and omphalitis are the main causes of the 2.4 million neonates who pass away during the first 28 days of life each year. A straightforward yet very successful strategy for lowering infant infections and enhancing survival rates is proper umbilical cord care [1].

During pregnancy, the umbilical cord acts as a lifeline between the mother and the foetus; but, if the cord stump is not kept clean after delivery, it may become a point of entry for harmful organisms. According to evidence-based recommendations, the cord should be kept dry and clean, and in high-risk situations, 4% chlorhexidine gel should be applied. Unsafe behaviours continue despite the recommendations demonstrated efficacy, especially in rural areas with limited access to professional care and health education [2].

Nigeria is one of the top causes of neonatal fatalities in sub-Saharan Africa, and the country's neonatal mortality rate is still too high. This burden is still largely caused by umbilical cord infections, particularly in rural regions with underdeveloped health services and cultural norms that have a big impact on maternal behaviour. Many moms seek

advice from family elders and traditional birth attendants, which frequently leads to the application of methylated spirit, herbs, or ashes on the chord stump [3].

Important factors influencing cord care behaviours include mother education level, cultural views, and socioeconomic background. Higher educated mothers are more likely to follow suggested methods, as are mothers who give birth in medical facilities. On the other hand, detrimental behaviours are frequently sustained by poverty, illiteracy, and deeply ingrained cultural norms. In rural areas like Emekuku in Imo State, where primary healthcare facilities are frequently the only point of contact for mother and child health services, these difficulties are especially noticeable [4]. In many rural Nigerian communities, there is a dearth of empirical data on maternal practices, despite the significance of umbilical cord care. In order to identify gaps and guide focused interventions to enhance neonatal health outcomes, this study aims to evaluate the practice of umbilical cord care among mothers attending certain primary health care centres in Emekuku.

MATERIALS AND METHODS

Research Design

This study adopted a mixed-methods research design, integrating quantitative and qualitative approaches to comprehensively examine maternal practices related to umbilical cord care in Emekuku, Imo State, Nigeria.

Study Area

The study was conducted in Emekuku, a rural community located in Owerri North Local Government Area of Imo State, southeastern Nigeria. Emekuku has an estimated population of approximately 20,000 inhabitants and is predominantly agrarian, with subsistence farming and petty trading as major economic activities. The community is characterized by low female literacy levels and high fertility rates.

Healthcare services in Emekuku are provided mainly through two primary health care (PHC) centres, which serve as the main sources of antenatal, delivery, and postnatal care. These facilities are often constrained by inadequate staffing, poor infrastructure, and inconsistent availability of essential maternal and neonatal care supplies. Traditional birth attendants and elder family members play significant roles in childbirth and neonatal care, particularly in umbilical cord management. Emekuku was selected due to the persistence of traditional cord care practices and its representativeness of rural Igbo communities in southeastern Nigeria.

Study Population

The study population comprised women of reproductive age (15–49 years) residing in Emekuku who had delivered within the preceding two years. This criterion ensured that participants had recent experiences and could accurately recall umbilical cord care practices.

Women were included if they were permanent residents of Emekuku, had at least one living child under two years of age, and provided informed consent. Mothers with severe illness affecting communication or cognition, as well as those unwilling to participate, were excluded from the study. Community health records estimated that approximately 2,000 women met the inclusion criteria at the time of the study.

Sample Size and Sampling Technique

The sample size for the quantitative component was determined using Cochran's formula for prevalence studies, assuming a 50% prevalence of appropriate cord care practices, a 95% confidence level, and a margin of error of 0.08. This yielded a minimum sample size of 162 respondents, which was considered adequate for statistical analysis.

A multi-stage sampling technique was employed. First, villages in Emekuku were stratified based on proximity to PHC facilities. Four villages were selected using simple random sampling. Within selected villages, households were systematically sampled, and one eligible mother per household was recruited.

For the qualitative component, 20 mothers were purposively selected for in-depth interviews, while three focus group discussions comprising 8–10 participants each were conducted to capture diverse perspectives based on age, education, and parity.

Ethical Considerations

Ethical approval was obtained from the **University of Port Harcourt Research Ethics Committee**. Permission was also secured from community leaders and PHC authorities. Written informed consent was obtained from all participants after explaining the study objectives, procedures, and rights. Confidentiality and anonymity were maintained through the use of unique identifiers, and participation was entirely voluntary, with respondents free to withdraw at any stage without penalty.

Sample Collection Instruments and Procedure

Quantitative data were collected using a structured interviewer-administered questionnaire adapted from validated maternal health instruments. The questionnaire consisted of umbilical cord care practices.

Qualitative data were collected using semi-structured interview guides for IDIs and FGD guides designed to explore cultural beliefs, traditional practices, and influences on cord care decisions. Data collection was conducted by trained research assistants fluent in English and Igbo to ensure cultural and linguistic appropriateness. Interviews and discussions were audio-recorded with participants' consent, and field notes were taken.

Validity and Reliability of Instruments

Content and face validity of the questionnaire were ensured through expert review by specialists in maternal and child health and public health research. A pilot test was conducted among 20 mothers in a neighboring community with similar characteristics, and necessary modifications were made. Internal consistency reliability was assessed using Cronbach's alpha, with coefficients ≥0.70 considered acceptable.

Reliability of qualitative data was enhanced through standardized interview protocols, audio recordings, verbatim transcription, and triangulation of data sources.

Statistical Analysis

Quantitative data were coded and analyzed using Statistical Package for Social Sciences (SPSS) version 26. Descriptive statistics (frequencies, percentages, means, and standard deviations) summarized respondents' practices. Statistical significance was set at $p < 0.05$.

Results

Table 4.5: Respondents Practices of Umbilical Cord Care (N = 151)

Characteristics	Frequency N =151	Percentage (%)
Consistently applied the recommended care practices		
Strongly agree	90	59.6
Agree	45	29.8
Disagree	10	6.6
Strongly disagree	6	4.0
Total	151	100.0
Followed the cleaning schedule regularly		
Strongly agree	85	56.3
Agree	50	33.1
Disagree	10	6.6
Strongly disagree	6	4.0
Total	151	100.0
Experienced difficulties in following care practices		
Strongly agree	30	19.9
Agree	50	33.1
Disagree	45	29.8
Strongly disagree	26	17.2
Total	151	100.0
Received sufficient guidance from healthcare providers		
Strongly agree	80	53.0
Agree	50	33.1
Disagree	15	9.9
Strongly disagree	6	4.0
Total	151	100.0
Umbilical cord stump fell off within the expected time		
Strongly agree	95	62.9

Characteristics	Frequency N =151	Percentage (%)
Agree	40	26.5
Disagree	10	6.6
Strongly disagree	6	4.0
Total	151	100.0

Source: Survey Data, 2024.

Table 4.5 examines how respondents applied umbilical cord care practices in real-life situations. A high proportion of respondents (59.6% strongly agreed and 29.8% agreed) reported consistently applying the recommended care practices. This shows a strong level of adherence among most respondents, suggesting that knowledge is being effectively translated into action. Similarly, 56.3% strongly agreed and 33.1% agreed that they followed the prescribed cleaning schedule regularly, indicating good compliance with hygiene routines critical to preventing infections in newborns.

Despite these positive trends, some respondents still experienced difficulties in implementing these practices. While 53% of respondents (strongly agreed) and 33.1% (agreed) that they received sufficient guidance from healthcare providers—indicating strong support systems—around 53% also acknowledged facing challenges in following care practices (19.9% strongly agreed and 33.1% agreed). This suggests that while guidance and motivation are present, external or personal barriers—such as time constraints, household workload, or resource availability—may hinder full compliance.

Furthermore, 62.9% strongly agreed and 26.5% agreed that the umbilical cord stump fell off within the expected time frame, which is a key sign of proper care and healing. This outcome reflects that the majority of respondents achieved successful cord healing, reinforcing the effectiveness of their practices. However, a small percentage (10.6%) disagreed or strongly disagreed, pointing to possible cases of delayed healing or complications, which could be linked to improper practices or external factors. Overall, the findings highlight strong adherence to cord care practices, supported by professional guidance, yet underline the need to reduce barriers and provide more practical support to ensure consistent care for all newborns.

Discussion

According to the study's findings, most women in Emekuku show a high degree of adherence to advised umbilical cord care procedures, demonstrating an effective conversion of information into useful behaviour. Almost nine out of ten respondents (89.4%) said they consistently followed the prescribed cleaning schedule and other cord care procedures. This degree of practice indicates that maternal health education provided by immunisation clinics, postpartum services, and community health workers is not only increasing awareness but also encouraging self-assurance and drive to implement safe newborn care practices [5].

According to [6], sanitary cord care practices in southeast Nigeria were substantially linked to better newborn outcomes, such as lower infection rates and prompt cord stump separation. The observed adherence is consistent with their earlier findings. The effectiveness of suggested care procedures was further supported by the fact that a significant percentage of moms in the current study reported cord stump separation within the anticipated timeframe. Such adherence is an important protective factor for neonatal survival because neonatal sepsis continues to be a major cause of infant mortality in places with limited resources [7].

Notwithstanding these positive results, the study also identified significant obstacles to the regular application of cord care procedures. Time constraints, conflicting family responsibilities, and uneven access to necessary supplies like sterile dressings and antiseptics were among the challenges that more than half of the respondents (53%) admitted to facing. This result is in line with the findings of [8], who highlighted how socioeconomic and environmental limitations frequently compromise the best maternal practices in low-income and rural areas. In the face of everyday survival demands, mothers who work in labour-intensive occupations like farming or small-time business may find it difficult to prioritise neonatal care. Even among moms with sufficient expertise, the likelihood of receiving poor care is increased by limited access to sanitary supplies and clean water [9].

With more than 86% of respondents confirming that they received sufficient help and information from medical professionals, the poll also showed a high degree of satisfaction with healthcare guidance. This emphasises how important healthcare professionals are in promoting appropriate behaviour, clearing up misunderstandings, and boosting moms' self-esteem during the postpartum phase. But the continued existence of issues suggests that health education might not be enough on its own to guarantee long-term adherence. When not handled comprehensively, external socioeconomic pressures, cultural norms, and logistical obstacles may reduce the efficacy of expert advice [10].

When combined, these results demonstrate the necessity of actions that go beyond the simple distribution of knowledge. Practical obstacles and caregiving difficulties may be lessened by tactics including the provision of free or heavily discounted cord care kits, community-based follow-up visits, and the involvement of family and community support networks. In Emekuku and similar rural settings, maintaining safe umbilical cord care practices and enhancing neonatal health outcomes require addressing both maternal knowledge and the enabling environment.

Conclusion

This study offers a thorough analysis of mothers' methods for caring for their umbilical cords in Emekuku, Imo State, highlighting both notable successes and enduring difficulties. The efficiency of continuing health education programs and the beneficial impact of maternal health services on newborn care behaviours are demonstrated by the high degree of adherence to advised cord care practices. Mothers showed a high level of awareness of important concepts, such as proper cleaning frequency, cord care techniques, and sanitation, which translated into generally admirable behaviours.

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