



Assessment of Compliance with Neonatal Infection Prevention Protocols in Federal University Teaching Hospital (FUTH), Owerri, Imo State, Nigeria

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Article History	Abstract
Received: 13 May 2026 Accepted: 17 Jul 2026 Published: 03 Aug 2026	Neonatal infections continue to be one of the major causes of illness and death, especially in developing countries with poor infection control practices and insufficient facility-based evidence. This study evaluated the implementation of neonatal infection prevention protocols by health care practitioners in FUTH Owerri. A quantitative cross-sectional research methodology was employed in this study, involving 100 participants selected from FUTH Owerri using stratified random sampling. A structured questionnaire was used for data collection, and analysis was done using descriptive statistics such as percentage, mean, and standard deviations with criterion mean; 2.5 in SPSS version 26. Findings indicated generally high levels of self-reported compliance across all assessed domains. Hand hygiene compliance was high among respondents (96.0%, Mean=3.83±0.45). The use of PPE, cleaning of environmental surfaces, and proper umbilical cord care also recorded very high compliance levels, with mean scores ranging from 3.89 to 3.97. Respondents generally adhered to aseptic procedures and sterilization practices, with mean scores above 3.50. Environmental cleanliness and education of caregivers on cord care were also well maintained. However, lower scores were recorded for documentation practices (87.0%, Mean=3.36±0.70), availability of PPE (89.0%, Mean=3.32±0.79), and regular infection prevention training (86.0%, Mean=3.33±0.93), showing areas where improvement is still needed. Generally, compliance was good but varied among indicators that are dependent on structure and processes. This paper concludes that although there is adequate compliance with neonatal infection prevention guidelines within FUTH Owerri, sustainability of this practice is constrained by inadequacies in terms of training, resources, and documentation. There is need for the hospital administration to ensure sustained staff training, supply of neonatal infection prevention supplies, and regular compliance monitoring in the facility.
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Introduction

The neonatal stage, referred to as the first 28 days after birth, is a crucial period during human growth when the body is extremely susceptible to infection because of the immature nature of the immune system (World Health Organisation [WHO], 2022; Choudhary, 2024). During this time, infections such as sepsis, pneumonia, and meningitis continue to be common causes of deaths among infants despite advancements in neonatal care and the use of early intervention techniques (WHO, 2022). Neonatal mortality continues to be a huge public health challenge since 2.3 million neonatal deaths were estimated globally in 2022 and accounted for nearly half of under-five deaths (WHO, 2024). Low- and middle-income areas such as Sub-Saharan Africa, are more affected by the neonatal mortality problem compared to other parts of the world since poor health delivery systems, weak infrastructure, and substandard clinical practices contribute to poor neonatal outcome (WHO, 2024).

One of the critical factors determining survival rates in neonates in health institutions is the efficiency of Infection Prevention and Control (IPC) measures, defined as scientific clinical and environmental strategies to prevent the spread of infection in health institutions (Soni et al., 2025). The core IPC practices include hand hygiene, aseptic and sterile techniques, correct use of PPE, sanitation of the environment, and proper waste disposal techniques (Frisco, 2024). Hand hygiene prevents the transmission of infection-causing pathogens between healthcare professionals and neonates, while correct use of PPE ensures minimal contact with infectious pathogens when taking care of patients (Soni et al., 2025). The use of aseptic procedures and sterilization is particularly critical in invasive neonatal procedures like catheter insertion, suctioning, and intravenous catheterization since any contamination can quickly cause sepsis (Alruwaili et al., 2024). Cleanliness of the environment and proper disposal of medical wastes are among the factors that greatly help in preventing microbial contamination in neonatal wards (Open Resources for Nursing [Open RN], 2021). Additionally, good cord management practices play a vital role in ensuring that there are no infections in the umbilical cords of neonates and prevent neonatal tetanus, which is common among newborns born in resource-limited areas that practice harmful cultural beliefs. Although there is guidance on how to implement IPC measures, their lack of adoption in many medical institutions is a significant problem.

Although IPC strategies have been proven effective, hospital-acquired infections continue to be a recurring problem worldwide and account for neonatal complications and deaths in premature and low-birth-weight babies (Hakami et al., 2024). Several studies

show inconsistency in IPC implementation and indicate that the knowledge and behavior of health care professionals regarding IPC are not consistent enough. For example, although healthcare professionals have been trained on IPC measures, adherence rates tend to be low because of various structural and behavioral reasons (Ochie et al., 2022). Likewise, in the case of the coronavirus disease 2019 (COVID-19) pandemic, it was found that compliance with infection prevention measures by health practitioners was relatively moderate to show that awareness does not necessarily mean compliance with behavioral adherence (Orji et al., 2023).

In neonatal healthcare environments, poor adherence to critical IPC measures has been documented. According to Ezike et al. (2021), nurses have been found to be non-compliant in following hand washing and sterilization guidelines, while Oko et al. (2024) have discovered that adherence levels to hand washing before attending to patients is at 62.8%. In addition, dangerous procedures related to umbilical cord care remain prevalent, with some caregivers continuing to use unhealthy practices even after knowledge about safe procedures is known (Orukwoku & Oji, 2025). This implies that the management of infections within neonatal care facilities may be affected by both facility adherence and other factors such as behavioral and systemic ones.

In Nigeria, neonatal mortality has been cited as a prevalent health problem, especially due to infection, which is one of the commonest causes of death among critically sick infants receiving care in tertiary care centers (Fajolu et al., 2022). Although there are IPC guidelines present in Nigeria, neonatal infections still result in death in hospitals. As such, it can be stated that there is a need for evaluation in order to determine the extent of compliance with the IPC guidelines by health professionals.

The Federal University Teaching Hospital, Owerri is a medical facility which provides specialized healthcare services for neonates and children in Imo State, Nigeria (Federal Teaching Hospital Owerri, 2020). Considering the susceptibility of neonates, as well as the complex healthcare offered at such facilities, it becomes imperative that proper adherence to infection prevention and control (IPC) guidelines is maintained in order to prevent preventable infections. Unfortunately, very little information exists regarding the level of adherence to neonatal IPC in FUTH Owerri, especially concerning areas such as hand washing, asepsis, environmental sanitation, personal protective equipment (PPE), and waste management practices.

The problem therefore lies in the continuous existence of a discrepancy between the already existing IPC policies and the current practice, leading to continued

occurrences of preventable infections in neonates despite the presence of evidence-based policies. It is important to determine the level of compliance and the determinants of adherence to IPC policies in order to address the operational challenges and develop specific solutions in a bid to improve neonatal outcomes. Thus, there is an urgent need for the conduct of this research in view of the need to create local evidence that will help address hospital acquired infections among neonates in tertiary healthcare institutions in Nigeria.

Hence, this research seeks to investigate the level of adherence to neonatal infection control guidelines among health workers at the Federal University Teaching Hospital (FUTH), Owerri, Imo State, Nigeria, and to identify the determinants of adherence to critical infection control practices such as hand hygiene, aseptic technique, clean environment, wearing of PPEs, and proper waste disposal.

Methodology

Study Area

The study was carried out at Federal University Teaching Hospital (FUTH), Owerri, Nigeria. The facility, previously referred to as Federal Medical Centre Owerri, was designated as a teaching hospital in 2022 and currently functions as a key referral and training institution in collaboration with Federal University of Technology, Owerri (Federal Teaching Hospital Owerri, 2020; Anyanwu et al., 2016). FUTH is a 700-bed tertiary health care centre that provides a wide range of services ranging from paediatrics, obstetrics and gynaecology, surgery, emergency treatment, oncology, psychological care, and rehabilitation (Virtue Foundation, 2024; Federal Teaching Hospital Owerri, 2020). Neonatal care unit and paediatrics are among the key areas at FUTH, as they provide specialised treatment for newborns and infants. The hospital acts as a key educational institution and conducts various medical research activities.

Study Design

This study adopted a quantitative cross-sectional survey design to assess healthcare workers' compliance with neonatal infection prevention protocols at the Federal University Teaching Hospital (FUTH), Owerri. The choice of this design was suitable since it would enable data collection at a single point in time (Aggarwal & Ranganathan, 2019), providing insight into the practices of healthcare professionals related to hand hygiene, PPE

use, environmental sanitation, aseptic techniques, and umbilical cord care.

Study Population

The study population consisted of healthcare workers at FUTH Owerri who are involved in neonatal care and infection prevention activities. This included doctors (paediatricians and neonatologists), nurses, infection control officers, and support staff responsible for cleaning, sterilisation, and waste management. Administrative personnel involved in supervision of infection prevention practices, and healthcare workers who had either a direct or indirect role in neonatal care and infection prevention were considered.

Inclusion criteria: healthcare workers in neonatal-related units with at least three months of experience at FUTH Owerri.

Exclusion criteria: temporary staff, staff on leave, and personnel not involved in neonatal care or infection prevention activities.

Sample Size Determination

The sample size was determined using Taro Yamane's formula for finite populations (Oluigbo et al., 2024):

$$n = \frac{N}{1 + N(e)^2}$$

Where:

n = sample size, N = population size (140), and e = margin of error (0.05).

Substituting the values:

$$\begin{aligned} n &= \frac{140}{1 + 140(0.05)^2} \\ n &= \frac{140}{1 + 0.35} \\ n &= \frac{140}{1.35} = 103.7 \approx 104 \end{aligned}$$

Thus, a total sample size of 104 healthcare workers was used for the study.

Sampling Technique

A stratified random sampling technique was adopted to make sure that there is an equitable representation within different professional groups (Zirneh et al., 2026). The

sample population was stratified on the basis of occupational categories (doctors, nurses, infection control officers, and others). Individuals were then randomly selected from each category depending on their proportional representation within that category.

Data Collection Instrument

Data was collected through the use of structured questionnaires containing closed-ended and Likert scale questions. The tool was structured in sections that included socio-demographic information and infection prevention practices, such as; hand hygiene, aseptic techniques, environmental cleanliness, cord care, PPEs and isolation procedures.

The questionnaire was constructed in a manner that would provide the researcher data not only on the behaviour itself but also on the determinant factors like availability of material and training.

Compliance Measurement and Scoring Process

Compliance with infection control measures for newborns was measured using five different domains, including hand washing practice, aseptic technique and sterilization practice, environmental cleaning and cord care practice, personal protective equipment use and isolation, and monitoring practices of the facility. Each response was graded using a four-point Likert scale of strongly disagree (1) to strongly agree (4).

Domain scores were obtained by computing the average score of all questions for every domain. The criterion for good compliance is a mean score of 2.5. Mean scores that reached up to or above 2.5 are considered to show good compliance, whereas those below 2.5 are poor. The computation of composite domains scores was done to objectively analyze compliance levels for the various infection control domains.

Incompletely answered questionnaires were omitted from the study.

Validity and Reliability of Instrument

The content validity of the questionnaire was achieved by consulting experts in infection prevention and newborn care to ensure that all areas were covered. The construct validity was based on the Theory of Planned Behaviour to ensure that all elements of attitude,

subjective norms, and perceived behavioural control were properly reflected.

The face validity of the tool was achieved by conducting a pre-test for the questionnaire with a small number of healthcare providers (10%) from another place outside the study area. To establish the reliability of the tool, a test-retest method was employed. In this case, the instrument was applied twice to a sample of respondents over a period of two weeks. The correlation analysis helped assess consistency in responses.

Method of Data Analysis

Data analysis was conducted using descriptive statistics in SPSS Version 26. Frequencies and percentages were computed for categorical variables, whereas mean and standard deviation were used to compute levels of compliance. The findings were presented in tabular form for better clarity and understanding.

Ethical Considerations

Ethical approval for the study was obtained from the ethical committee of the University of Port Harcourt (UPH/CEREMAD/REC/MM117/043) and the FUTH Owerri ethics review board (FTH/OW/HCS.4/34884). The study adhered to the principles of the Declaration of Helsinki and national ethical guidelines for human research. All participants voluntarily took part in the research after they were informed of the objectives of the study. Their confidentiality was guaranteed, and no participant was identified personally. Participants were also advised of their rights to withdraw from the study at any point without facing any consequences. The study also avoided exposing participants to any harm or risks during data collection.

Results

Table 1 shows the Socio-Demographic Characteristics of Respondents. Most respondents were above 50 years (35.0%), followed by those aged 40–50 years (27.0%), 30–40 years (23.0%), and below 30 years (15.0%). There were 59.0% females and 41.0% males. Support staff (28.0%) and nurses (27.0%) formed the majority by role. Most had 4–6 years of experience (37.0%). Respondents were mainly from the neonatal (45.0%) and paediatric units (39.0%). The majority held a bachelor's degree (43.0%), followed by diploma (29.0%) and basic education (20.0%).

Table 1: Socio-Demographic Characteristics of Respondents

Variable	Category	Frequency (n=100)	Percent (%)
Age (years)	Below 30	15	15.0
	30–40	23	23.0
	40–50	27	27.0
	Above 50	35	35.0
Gender	Male	41	41.0
	Female	59	59.0
Professional Role	Doctor	21	21.0
	Nurse	27	27.0
	Infection Control Officer	24	24.0
	Support Staff	28	28.0
Years of Experience	1–3 years	15	15.0
	4–6 years	37	37.0
	7–10 years	31	31.0
	>10 years	17	17.0
Department	Neonatal Unit	45	45.0
	Paediatric Unit	39	39.0
	Others	16	16.0
Education Level	Basic	20	20.0
	Diploma	29	29.0
	Bachelor's Degree	43	43.0
	Master's Degree	7	7.0
	PhD/Doctorate	1	1.0

Table 2: Level of Compliance with Hand Hygiene Protocols in Neonatal Care at FUTH Owerri (n = 100)

Statements	Strongly Agree n (%)	Agree n (%)	n	Disagree n (%)	Strongly Disagree n (%)	Mean	SD
I wash my hands before and after patient contact consistently	87 (87.0)	9 (9.0)		4 (4.0)	0 (0.0)	3.83	0.45
I consistently wear appropriate PPE when handling neonates	89 (89.0)	11 (11.0)		0 (0.0)	0 (0.0)	3.89	0.32
I clean and disinfect neonatal care unit surfaces after patient handling	89 (89.0)	11 (11.0)		0 (0.0)	0 (0.0)	3.89	0.32
I monitor infection prevention resources (e.g., sanitisers, gloves) regularly	73 (73.0)	18 (18.0)		8 (8.0)	1 (1.0)	3.63	0.63
I am confident in following infection prevention protocols	53 (53.0)	46 (46.0)		1 (1.0)	0 (0.0)	3.52	0.52
I follow correct protocol for cord clamping and care	97 (97.0)	3 (3.0)		0 (0.0)	0 (0.0)	3.97	0.17

Grand Mean: 3.79

Table 2 shows the level of compliance with hand hygiene protocols in neonatal care at FUTH Owerri. Handwashing before and after patient contact was reported by 96.0% (87.0% strongly agree, 9.0% agree), with a mean of 3.83 ± 0.45. Use of appropriate PPE when handling neonates recorded 100.0% (89.0% strongly agree, 11.0% agree), with a mean of 3.89 ± 0.32. Monitoring of infection prevention resources was reported by 91.0% (73.0% strongly agree, 18.0% agree), with a mean of 3.63 ± 0.63. I am confident in following infection prevention protocols recorded 53.0% (53.0% strongly agree, 46.0% agree), with a mean of 3.52 ± 0.52. I follow correct protocol for cord clamping and care recorded 97.0% (97.0% strongly agree, 3.0% agree), with a mean of 3.97 ± 0.17.

3.63 $\pm$ 0.63. Confidence in adherence to protocols recorded 99.0% (53.0% strongly agree, 46.0% agree), with a mean of 3.97 $\pm$ 0.17. Overall, responses indicate consistently high reported compliance across the assessed infection prevention practices. Correct cord clamping and care practice recorded 100.0% (97.0% strongly agree,

Table 3: Level of Adherence to Aseptic Techniques and Equipment Sterilisation Practices in Neonatal Care Units at FUTH Owerri (n = 100)

Statements	Strongly Agree n (%)	Agree n (%)	Disagree n (%)	Strongly Disagree n (%)	Mean	SD
I consistently perform hand hygiene before and after handling each neonate	56 (56.0)	41 (41.0)	3 (3.0)	0 (0.0)	3.53	0.56
I strictly adhere to aseptic techniques during invasive procedures (IV cannulation, suctioning, catheterisation)	78 (78.0)	22 (22.0)	0 (0.0)	0 (0.0)	3.78	0.42
Sterile gloves and appropriate PPE are always used during aseptic procedures	59 (59.0)	38 (38.0)	3 (3.0)	0 (0.0)	3.56	0.55
I follow hospital protocols for cleaning and sterilising reusable instruments	59 (59.0)	41 (41.0)	0 (0.0)	0 (0.0)	3.59	0.49
I document sterilisation and infection prevention procedures as required	49 (49.0)	38 (38.0)	13 (13.0)	0 (0.0)	3.36	0.70
There are regular monitoring and supervision of aseptic and sterilisation compliance in the neonatal unit	83 (83.0)	11 (11.0)	7 (7.0)	0 (0.0)	3.76	0.57

Grand Mean: 3.60

Table 3 shows the level of adherence to aseptic techniques and equipment sterilisation practices in neonatal care units at FUTH Owerri. Hand hygiene before and after handling neonates was reported by a total of 97.0% (56.0% strongly agree, 41.0% agree) (Mean = 3.53, SD = 0.56). Adherence to aseptic techniques during invasive procedures was 100.0% (78.0% strongly agree, 22.0% agree) (Mean = 3.78, SD = 0.42). Sterile glove and PPE use recorded 97.0% (59.0% strongly agree, 38.0% agree) (Mean = 3.56, SD = 0.55). Sterilisation of reusable instruments had 100.0% (59.0% strongly agree, 41.0% agree) (Mean = 3.59, SD = 0.49). Documentation of procedures recorded 87.0% (49.0% strongly agree, 38.0% agree) (Mean = 3.36, SD = 0.70). Monitoring and supervision showed 94.0% (83.0% strongly agree, 11.0% agree) (Mean = 3.76, SD = 0.57). Appropriate waste disposal recorded 97.0% (69.0% strongly agree, 28.0% agree) (Mean = 3.64, SD = 0.62). Use of sterile materials during umbilical cord care was reported by 100.0% (93.0% strongly agree, 7.0% agree) (Mean = 3.93, SD = 0.26). Adherence to approved cord care protocols was 99.0% (82.0% strongly agree, 17.0% agree) (Mean = 3.80, SD = 0.44). Education of mothers/caregivers on cord care practices was reported by 97.0% (56.0% strongly agree, 41.0% agree) (Mean = 3.53, SD = 0.56). Regular supervision and monitoring recorded 94.0% (41.0% strongly agree, 53.0% agree) (Mean = 3.35, SD = 0.59).

Table 4 shows compliance with environmental cleanliness and safe umbilical cord care protocols in the neonatal care unit at FUTH Owerri. Environmental cleaning and disinfection were reported by 97.0% (72.0% strongly agree, 25.0% agree) (Mean = 3.69, SD = 0.52). Table 5 shows the implementation and adherence to PPE, barrier nursing, and isolation protocols in preventing neonatal infections at FUTH Owerri. Consistent use of PPE was reported by 96.0% (59.0% strongly agree, 37.0% agree) (Mean = 3.53, SD = 0.64). Availability of PPE in the unit was reported by 89.0% (52.0% strongly agree, 37.0% agree) (Mean = 3.32, SD = 0.79). Prompt implementation of isolation protocols was reported by 97.0% (79.0% strongly agree, 18.0% agree) (Mean = 3.76, SD = 0.49). Regular training on PPE and barrier

Table 4: Compliance Level with Environmental Cleanliness and Safe Umbilical Cord Care Protocols in the Neonatal Care Unit at FUTH Owerri (n = 100)

Statements	Strongly Agree n (%)	Agree n (%)	n Disagree n (%)	Strongly Disagree n (%)	Mean	SD
The neonatal unit environment (floors, surfaces, incubators, workstations) is cleaned and disinfected according to established protocols	72 (72.0)	25 (25.0)	3 (3.0)	0 (0.0)	3.69	0.52
Waste disposal in the neonatal unit is carried out appropriately using standard infection prevention guidelines	69 (69.0)	28 (28.0)	1 (1.0)	2 (2.0)	3.64	0.62
Sterile materials are used during umbilical cord care procedures	93 (93.0)	7 (7.0)	0 (0.0)	0 (0.0)	3.93	0.26
Approved hospital protocols (e.g., chlorhexidine use where indicated) are followed for umbilical cord care	82 (82.0)	17 (17.0)	0 (0.0)	1 (1.0)	3.80	0.44
Mothers/caregivers are educated on hygienic umbilical cord care practices before discharge	56 (56.0)	41 (41.0)	3 (3.0)	0 (0.0)	3.53	0.56
There are regular supervision and monitoring of environmental cleanliness and cord care compliance in the unit	41 (41.0)	53 (53.0)	6 (6.0)	0 (0.0)	3.35	0.59

*Grand Mean: 3.66***Table 5: Implementation and Adherence to PPE, Barrier Nursing, and Isolation Protocols in Preventing Neonatal Infections at FUTH Owerri (n = 100)**

Statements	Strongly Agree n (%)	Agree n (%)	n Disagree n (%)	Strongly Disagree n (%)	Mean	SD
I consistently use appropriate PPE when caring for neonates	59 (59.0)	37 (37.0)	2 (2.0)	2 (2.0)	3.53	0.64
PPE (gloves, gowns, masks, eye protection) is readily available in the neonatal unit	52 (52.0)	37 (37.0)	4 (4.0)	5 (5.0)	3.32	0.79
Isolation protocols are promptly implemented for neonates with infectious conditions	79 (79.0)	18 (18.0)	3 (3.0)	0 (0.0)	3.76	0.49
I receive regular training or updates on PPE use, barrier nursing, and isolation procedures	56 (56.0)	30 (30.0)	5 (5.0)	9 (9.0)	3.33	0.93
I comply with hospital guidelines regarding cohorting or isolating infected neonates	88 (88.0)	12 (12.0)	0 (0.0)	0 (0.0)	3.88	0.32
There are effective monitoring and supervision of PPE and isolation compliance	53 (53.0)	41 (41.0)	6 (6.0)	0 (0.0)	3.47	0.61

Grand Mean: 3.55

nursing recorded 86.0% (56.0% strongly agree, 30.0% = 0.32). Monitoring and supervision of adherence agree) (Mean = 3.33, SD = 0.93). Compliance with recorded 94.0% (53.0% strongly agree, 41.0% agree) cohorting or isolation guidelines was reported by 100.0% (Mean = 3.47, SD = 0.61). (88.0% strongly agree, 12.0% agree) (Mean = 3.88, SD

Table 6: Composite Domain Scores for Compliance with Neonatal Infection Prevention Protocols

Domain	Mean Score	SD	Interpretation
Hand hygiene practices	3.79	0.48	High compliance
Aseptic techniques and sterilisation	3.60	0.55	High compliance
Environmental cleanliness and cord care	3.66	0.50	High compliance
PPE use and isolation practices	3.55	0.63	High compliance

Table 6 summarizes the grand mean scores across all four domains assessed in this study. All domains recorded grand means well above the criterion mean of 2.5, ranging from 3.55 to 3.79. Hand hygiene protocols had the highest overall compliance (3.79), followed by environmental cleanliness and cord care (3.66), aseptic techniques and sterilization (3.60), and PPE/barrier nursing/isolation (3.55).

Discussion

From the results obtained in this study, it was evident that compliance with neonatal infection prevention measures by healthcare workers at FUTH Owerri was generally high. The study population comprised mostly experienced healthcare workers working in the neonatal and paediatric departments, such as nurses and supporting personnel, whose main work involves the care of the patients, cleaning of the environment and proper disposal of waste products. It is worth noting that earlier studies have indicated that the experience of staff and their roles can affect their compliance with infection prevention procedures (Naji & Aldoori, 2025). It is possible, therefore, that the reasonably high level of adherence demonstrated by participants in this study could be attributed to the level of experience among the participants.

There were high levels of compliance with hand hygiene and other basic infection prevention practices among the participants in the study. The results differ from those obtained by Oko et al. (2024) who found poor compliance with hand hygiene practices among the neonatal nurses at a tertiary hospital in Nigeria. Similarly, Biswas et al. (2019) revealed the existence of gaps in adherence to hand hygiene even after having access to infection prevention policies. There are many possible reasons as to why compliance was at a high rate in the present study. For instance, people have become more aware of preventive measures against infections due to the pandemic caused by the COVID-19 virus, regular observation within the facility, and availability of

preventive measures. However, because the data obtained was subjective, the possibility of over-reporting would not be ruled out. This shows that there is a need for periodic monitoring as well as observational assessments to maintain compliance.

The study also showed good adherence to aseptic techniques and sterilisation practices during neonatal procedures. Similar findings were reported by Shahbaz et al. (2025), who observed improved aseptic practice following structured training among healthcare workers. In contrast, Ezike et al. (2021) reported poor sterilisation and hand hygiene practices among nurses in neonatal units despite adequate knowledge of infection prevention measures. Differences in supervision, training, and access to sterilisation equipment may account for such differences. While compliance was generally high, there were relatively low compliance rates for documentation activities, meaning that proper record keeping needs improvement.

Maintaining environmental hygiene, disposing of waste properly, and maintaining good umbilical cord care practice was also observed among the participants. Cord care practices education conducted among mothers by health care professionals might contribute to decreasing the occurrence of improper cord practices which can be linked to infections of the newborn. Unlike what Orukwou and Oji (2025) observed regarding some women using dangerous substances for umbilical cord care in Rivers State, this study found that proper cord care practices were observed. The results obtained from this study demonstrate that ongoing caregiver training in health institutions could enhance cord care skills and prevent infections among babies. Nevertheless, the relatively low supervision scores obtained from this study highlight the importance of consistent monitoring of these guidelines.

High compliance was noted regarding PPE use, barrier nursing, and isolation procedures. However, fewer answers in relation to the accessibility of PPE and the

frequency of training imply that there might be certain problems at an institutional level. These were similarly highlighted by Darboe et al. (2025) and Alshehri (2023), who emphasized the importance of resource availability, supervision, and training among other factors that could affect compliance to infection control protocols. As such, it can be inferred that high compliance would be reliant not only on healthcare practitioners but also institutional efforts in the form of regular training, supervision, and provision of infection prevention supplies.

In general, the results from the current research indicate that the level of reported compliance with the guidelines on the prevention of neonatal infections is relatively high in all assessed aspects at FUTH Owerri, compared to other local and regional research on the subject where compliance levels were found to be moderate to poor (Jayasinghe & Abeysena, 2020; Naji & Aldoori, 2025). It should be emphasised that the observed discrepancies can be explained by differences in institutional policies, training, and supervisory procedures used at various Organisations. At the same time, other studies, such as Otobo et al. (2025), that found that the adherence rate among nursing students is high. Therefore, it is possible to assume that better training and awareness have a significant impact on reported compliance in FUTH Owerri.

Strengths and limitations of the study

One of the key strengths of this study is the evaluation of several aspects of neonatal infection prevention practices among various types of healthcare providers responsible for neonatal care. Moreover, this study has provided specific information on infection prevention practices which could be useful for planning and implementing infection prevention policies in tertiary healthcare facilities.

On the contrary, one limitation of this study is the use of a self-report questionnaire, which might be subject to response bias and social desirability bias. Furthermore, since this study used a cross-sectional design, the results cannot be interpreted causally. Finally, another possible drawback of this study is the fact that it is done within a single tertiary healthcare setting and cannot be generalised.

Implications of the findings of the study

The findings of this study indicate that the implementation of stronger institutional systems is required in order to sustain compliance with infection prevention guidelines. Training the staff on an ongoing basis, providing infection prevention tools, provision of effective supervision and documentation might lead to consistent infection prevention practices. These findings will help policymakers and hospital managers come up with measures to reduce neonatal healthcare-associated infections.

Conclusion

This research revealed that healthcare practitioners at FUTH Owerri reported a relatively high level of compliance with the neonatal infection prevention policies. The highest levels of compliance were noted in areas such as hand hygiene, aseptic technique, environment cleanliness, cord care, and isolation. However, the inadequacies in areas such as training, PPE availability, and documentation point towards the necessity of more effective supportive mechanisms from the institution.

Recommendations

1. FUTH Owerri needs to invest more in continuous professional training of all health workers on neonatal infection prevention practices.
2. Consistent provision of infection prevention materials including PPEs, disinfectants, sterilisation materials, and hand hygiene supplies needs to be ensured by the hospital administration.
3. Supervision, monitoring, and compliance audits need to be institutionalized in order to increase compliance with infection prevention guidelines.
4. Standardized documentation and reporting mechanisms need to be established for better record keeping regarding sterilization procedures and infection prevention efforts.
5. Further studies using observational research designs and multicentric settings need to be undertaken.

Conflict of Interest

The authors declare no conflict of interest.

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