RESEARCH ARTICLE: Nurses' Knowledge and Practices in Neonatal Sepsis Prevention

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ABSTRACT. This study assessed the Nurses knowledge and practices in neonatal sepsis prevention for the Fiscal Year 2025. With 47 samples taken through non-probability sampling method via purposive sampling, and with the use of weighted mean, standard deviation, t-test for independent samples, One-way ANOVA, and Pearson's r, this study reveals the following findings:1) Of the 47 respondents, mostly are female, married within the age range of 30-39 years old; 2) On the average, the nurses' level of knowledge and practice in the neonatal sepsis prevention is very knowledgeable; 3) Generally, variables age, gender, marital status do not significantly mediate the level of knowledge and practice in neonatal sepsis prevention ; 4) Generally, the group of respondents who rated as Strongly Agree or very knowledgeable in terms of hygiene and practice probably the same group of respondents who rated the same in terms of sterilization and disinfection, antibiotic prophylaxis, and recognizing risks and signs and symptoms respectively; and 5) This study seems to support This study seems to support the Health Belief Model (HBM) and theory of reasoned action. These theories suggests that nurses who perceive neonatal sepsis as a serious threat and believe that their actions can effectively prevent it are more likely to follow recommended practices consistently.
KEYWORDS: Neonatal Sepsis Prevention, Nurses' Knowledge, Health Belief Model

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Introduction

Neonatal sepsis is a severe disease that poses a significant barrier to infant care throughout the world. It is characterized by an infection in infants that is systemic in nature and occurs in the first 28 days of life, and if not treated, often results in higher morbidity and mortality. Babies are particularly vulnerable because of their undeveloped immune system, and minor errors in infection control can be very detrimental. Hence, early prevention and detection are key components of neonatal care (Chavez, J.V. 2020).

Although there has been significant progress in technology and maternal and newborn care practices, neonatal sepsis remains a prominent global public health issue. According to the World Health Organization (WHO, 2023), about 26 million newborns each year are impacted by sepsis and die at the rate of about 1.4 million. These statistics put into sharp perspective the immediate need to reinforce preventive measures within hospitals, especially for low- and middle-income countries where health structures and capacities may be

underwhelming. Sepsis continues to have its particular devastating impacts on countries such as the Philippines (Chavez, J.V., Adalia, H.G., and Alberto, J.P. (2023).

In the Philippines, neonatal sepsis is a major cause of infant mortality. The Department of Health (2022) has listed it as a recurring and urgent problem, especially in government hospitals and rural health units where training opportunities and resources may be limited. National guidelines and protocols are in place to assist healthcare workers in preventing neonatal sepsis, but compliance with these standards is not uniform. Knowledge gaps, staff shortages, and poor infection control practices are some of the factors that lead to persistent challenges in effective prevention.

Nurses are central to neonatal care and are usually the first line of defense against infections in newborns. Their attitudes, knowledge, and practices have a significant impact on the application of infection control practices and the general outcomes of neonatal patients. Thereby, it is important to ensure that nurses are adequately prepared with current knowledge and competencies to help curb the prevalence of sepsis among neonates. Nevertheless, a number of studies (e.g., Santos et al., 2019; Cruz et al., 2021) have established that numerous nurses, particularly those operating in rural and underserved settings, are not well trained or informed in relation to prevention of neonatal sepsis.

This study aimed to assess the understanding and actions of nurses at Sulu Sanitarium and General Hospital, a public healthcare institution catering to a disadvantaged community in the southern Philippines. The research sought to recognize current gaps and obstacles in the efficient prevention of neonatal sepsis from the viewpoint of nursing practitioners. The study offered data-driven insights by assessing the existing competency levels of nurses, which are essential for shaping future educational and policy measures (Inoferio HV, Espartero MM, Asiri MS, et al., 2024).

Ultimately, the results from this research were key in guiding the creation of specialized training programs aimed at improving the skills of nurses in preventing neonatal sepsis. Enhancing nurses' abilities in this field is anticipated to result in better infection control methods, more secure clinical settings, and improved health results for newborns. Tackling these deficiencies is not merely a clinical requirement but also a public health urgency to lower infant mortality and enhance neonatal survival rates in the Philippines and comparable environments.

Research Questions

1.What is the socio-demographic profile of nurses assigned in Sulu Sanitarium General Hospital in terms of:
1.1 Age
1.2 Gender;
1.3 Civil Status;
1.4 Length of Service; and
1.5 Employment status?
2.What is the Nurses' level of knowledge and practices in neonatal sepsis prevention in terms of:
2.1 Hygiene Practices;
2.2 Sterilization and Disinfection;
2.2 Antibiotic Prophylaxis; and
2.4 Risk/signs and symptoms?
3 Is there a significant difference in the level of nurse's knowledge and practices in neonatal sepsis prevention when data are grouped according to socio demographic profile in terms of;
3.1 Age;

3.2 gender;
3.3 civil status;
3.4 length of service; and
3.5 employment status;
4 Is there a significant correlation among the subcategories subsumed under nurses' level knowledge and practices in neonatal sepsis prevention?

Literature Review

Foreign Literature and Studies

Neonatal sepsis is a critical condition affecting newborns, characterized by various symptoms such as temperature fluctuations, lethargy, and metabolic acidosis within the first four weeks of life. Early diagnosis and management are crucial to prevent severe outcomes, including permanent disability or death. This literature review examines the role of nurses in recognizing and preventing neonatal sepsis, emphasizing the importance of education and training.

The development of neonatal sepsis is often linked to a variety of predisposing factors, including intrauterine infections, premature or prolonged rupture of membranes, maternal infections, lack of aseptic practices, birth asphyxia, low birth weight, inadequate feeding practices, and needle pricks. Neonatal sepsis is categorized into two types: early onset sepsis, which develops within the first 72 hours of life and is often associated with intrauterine infections or maternal conditions, and late onset sepsis, which develops after 72 hours, typically during the first or second week of life (Verdeflor RN, 2024). The clinical manifestations of neonatal sepsis can vary, but often include prenatal hypoxia, respiratory distress, congenital pneumonia, or a silent, sudden death without any apparent signs or symptoms. In some cases, infants may exhibit altered feeding behavior, hypothermia, poor cry, abdominal distention, diarrhea, or vomiting. The diagnosis of neonatal sepsis relies on a combination of blood cultures, lumbar puncture for cerebrospinal fluid analysis, and urine cultures. The incidence of bacterial sepsis is inversely proportional to birth weight and gestational age, with higher rates observed in premature infants compared to term infants (Widai et al. 2021).

Neonatal sepsis remains a leading cause of morbidity and mortality, particularly in low and middle-income countries. In 2012, approximately 7 million severe bacterial infections occurred in neonates across South Asia, sub-Saharan Africa, and Latin America. By 2015, neonatal sepsis was the third leading cause of death in children under five, particularly affecting those in developing nations (Hewamalage et al., 2019). The mortality rate associated with neonatal sepsis is significantly higher in premature infants and those with early onset sepsis, highlighting the critical need for effective prevention and management strategies. The importance of knowledge regarding the etiologic agent of neonatal sepsis cannot be overstated, as it plays a crucial role in reducing associated mortality and complications. Nurses play a vital role in preventing neonatal sepsis by implementing standard nursing care practices, as this condition can pose a significant threat to the community if left untreated (Widai et al 2021).

Several studies highlight the significant role of nurses in preventing neonatal sepsis through early identification and adherence to infection control practices.

Adams and Ryan (2020) conducted a study in the UK, demonstrating that comprehensive training programs significantly improved nurses' ability to recognize early signs of sepsis. Their findings emphasized the need for continuous professional education and the integration of sepsis-specific protocols into nursing curricula.

Chen, Wang, and Zhao (2021) focused on the role of nurses in neonatal intensive care units (NICUs) in China. Their research indicated that strict adherence to hygiene protocols, including the use of personal protective equipment (PPE) and frequent handwashing, reduced

the incidence of sepsis. They recommended regular protocol updates based on current evidence.

Jones and Kaur (2022) investigated knowledge gaps among U.S. NICU nurses regarding sepsis prevention. Although nurses were generally aware of infection control measures, inconsistencies in protocol application were noted. The study highlighted the necessity for standardized guidelines and better communication to enhance sepsis prevention efforts.

Singh and Patel (2023) explored the implementation of WHO guidelines for neonatal sepsis prevention in India. They identified key strategies such as maternal education and proper hand hygiene, while also addressing challenges faced in resource-limited settings. The authors called for increased governmental support to equip nurses with necessary resources and trainings.

Martin and Lopez (2019) emphasized the importance of continuous education for nurses in Spain. Their study found that regular training on sepsis prevention improved nurses' ability to identify infections promptly, and they recommended simulation-based training for handling neonatal emergencies.

Nurses' Knowledge and Practices in Neonatal Sepsis Prevention

Neonatal sepsis is a critical condition characterized by systemic illness and bacteremia occurring within the first month of life. Neonatal sepsis, a serious condition affecting newborns, poses a significant threat to global health, causing high mortality rates, particularly in developing countrie (Murro RA, Lobo JG, Inso ARC, Chavez JV. 2023). This condition arises when pathogenic bacteria enter the bloodstream, leading to an overwhelming infection that can manifest as septicemia, pneumonia, or meningitis. The incidence of neonatal sepsis is particularly high in premature infants and those with early onset sepsis, with mortality rates ranging from 10% to 50% or higher. The World Health Organization reports that over 70% of deaths in children under five occur within the first year of life, with 40% occurring within the first month, and neonatal sepsis is responsible for a significant portion of these deaths (Widai et al (2021).

Understanding the knowledge and practices of healthcare professionals, particularly nurses, in relation to this condition is vital for improving patient outcomes in Neonatal Intensive Care Units (NICUs).

Research by Ibrahim et al. (2019) examined the awareness and practices of nurses about neonatal sepsis in NICUs at El-Minia Hospitals. Employing a descriptive approach, the researchers gathered a convenience sample of 50 nurses from Der-Mwas and Mallawy hospitals. The methods for data collection included a structured interview questionnaire, a knowledge assessment form, and an observational checklist. The results indicated that all nurses exhibited adequate knowledge regarding environmental risk factors related to neonatal sepsis. Moreover, more than 75% of the participants demonstrated sufficient understanding of maternal risk factors and treatment management approaches for neonatal sepsis, with precise figures noted at 78.0% and 76.0%, respectively. Moreover, most nurses demonstrated effective practices in the care of neonates diagnosed with sepsis, whereas only a small percentage showed ineffective practices (Magno, J.M., Indal, R.S., Chavez, J.V., et al., 2024).

Hasan et al. (2020) conducted a descriptive study in Hilla Hospitals from September 9, 2018, to February 20, 2019, with the aim of evaluating nurses' understanding of neonatal sepsis prevention and examining the correlation between their knowledge and socio-demographic factors. The research revealed that 70% of nurses at Hilla City Hospital exhibited adequate understanding of preventing neonatal sepsis. In addition, notable correlations were found between nurses' knowledge and their educational qualifications, length of service, experience, and involvement in training programs (p-value <0.05). These results indicate that elements like

education, experience, and training significantly influence nurses' knowledge and comprehension of strategies for preventing neonatal sepsis (Bondoc RS Jr., 2024).

In the same vein, Qazi et al. (2023) carried out a descriptive cross-sectional study from September 1, 2021, to November 30, 2021, to evaluate nurses' knowledge about ENC in the Special Care Neonatal Unit (SCNU) at Government Medical College and Hospital (GMC), Doda, Jammu and Kashmir, India. The research showed that the majority of nurses displayed strong knowledge about ENC and the essential equipment utilized in the SCNU. Nonetheless, understanding of advanced tools and methods was relatively limited. Importantly, every nurse accurately recognized bacteria as the cause of neonatal sepsis. The results indicated that nurses' knowledge levels were uniform across different demographic factors such as age, gender, religion, educational background, work environment, and any specialized training in neonatology (Comeros, N.A., Cuilan, J.T., Chavez, J.V., 2024).

Tafere et al. (2022) assessed the knowledge and practice of nurses regarding infection prevention in Ethiopia. The study found that overall knowledge and practice levels were 59.4% and 53%, respectively, with factors such as educational level and training influencing outcomes.

A study conducted in Egypt assessed the knowledge and practices of 50 nurses in NICUs regarding neonatal sepsis. Results showed that all nurses had satisfactory knowledge regarding environmental risk factors associated with neonatal sepsis (Ibrahim et al., 2019).

Moreover, an extensive examination of existing management approaches for neonatal sepsis, performed through Google Scholar research from 1980 to 2023, underscores substantial advancements in the comprehension and treatment of this critical condition. The article, featured in the Journal of Neonatal Nursing by Sultan, Ibrahim, and Elmahdy (2024), highlights the significance of a comprehensive strategy that includes progress in research, technology, and nursing practices. Worldwide initiatives have resulted in customized diagnostic and therapeutic strategies, emphasizing the creation of swift and individualized diagnostic instruments for prompt detection and timely responses. The review highlights the essential importance of nursing education, ongoing training, and the incorporation of technology in improving healthcare professionals' ability to deliver optimal care for at-risk newborns.

Despite with advancements, the necessity for continued research, interdisciplinary teamwork, and converting discoveries into real enhancements in clinical practice is still crucial. Ongoing progress in comprehending neonatal sepsis and implementing research outcomes will be crucial in further lowering mortality rates and improving the health of vulnerable infants (Bondoc Jr. RS, 2024).

The literature highlights the essential role of nurses in preventing and managing neonatal sepsis. Ongoing education, compliance with infection control measures, and awareness of early indicators are essential for enhancing outcomes in newborns. Additional studies, especially in resource-poor environments, are crucial to improve nurse education and ultimately lower the rates of neonatal sepsis.

Local Literature and Studies

A study by the Philippine Society of Newborn Medicine (2019) emphasizes the critical role of nurses in preventing neonatal sepsis by adhering to clinical guidelines. Nurses are responsible for recognizing the early signs of sepsis and implementing timely interventions, such as the administration of antibiotics and proper hand hygiene. The study underscores the importance of nurses' knowledge of sepsis protocols for infection control, including understanding the pathogens most responsible for neonatal infections and their respective treatments. The research suggests continuous professional development programs focused on educating nurses about neonatal sepsis management, stressing that early detection and

appropriate management are key factors in reducing the mortality rate associated with neonatal sepsis (Department of Health, 2019).

Research conducted in Philippine hospitals between 2018 and 2019 revealed significant deficiencies in infection control practices during deliveries, which were linked to an increased risk of neonatal sepsis. The findings indicated that inadequate hygiene, lack of sterilization of delivery room equipment, and improper handwashing were contributing factors. Nurses, as the primary caregivers during childbirth, are pivotal in ensuring that infection control protocols are adhered to, including maintaining sterile environments and performing skin-to-skin contact between mother and newborn to boost neonatal immunity (Chavez JV, Unga NH,2024) . The study also highlighted gaps in training, suggesting that more targeted educational initiatives focusing on sanitation and infection control practices are needed. Nurses' ability to maintain a sterile environment and prevent infections was found to have a direct impact on reducing the rates of neonatal sepsis in these healthcare settings (Philippine Society of Newborn Medicine, 2019; Department of Health, 2019).

Another significant study conducted in 2020 explored maternal and neonatal health in the Philippines, with a particular focus on the use of maternal antisepsis during labor. The research demonstrated that using antiseptic solutions such as vaginal chlorhexidine could substantially reduce the incidence of neonatal sepsis, particularly in resource-limited healthcare facilities. The role of nurses was highlighted as crucial in ensuring the administration of these antiseptic measures and educating expectant mothers about their importance (Chavez, J.V., 2024). The study emphasized the need for nurses to be well-versed in both maternal and neonatal sepsis prevention strategies, which include maintaining a clean delivery environment, proper hand hygiene, and the application of antiseptics. Furthermore, the study called for greater attention to nurses' continuing education and professional development, ensuring that they are equipped with the latest knowledge and skills to combat neonatal infections (Department of Health, 2020).

Hand hygiene remains one of the most effective methods for preventing neonatal infections, as indicated by a 2021 study focusing on neonatal intensive care units (NICUs) in the Philippines. The study stressed that nurses' adherence to proper handwashing techniques significantly reduced the incidence of neonatal sepsis. This preventive measure is especially critical in NICUs, where newborns are more vulnerable to infections due to their underdeveloped immune systems. The research highlighted the importance of enforcing strict hand hygiene policies among all healthcare professionals working in neonatal units, with nurses serving as role models for best practices. Additionally, the study recommended ongoing hand hygiene training programs to ensure compliance and improve infection prevention strategies. Nurses were seen as central to reducing neonatal infection rates, making their role indispensable in the fight against neonatal sepsis (Philippine Society of Newborn Medicine, 2021; Department of Health, 2021).

Maternal immunization is another critical factor in the prevention of neonatal sepsis, as highlighted in research by the Department of Health (2019). The study focused on the impact of maternal vaccinations, such as tetanus and influenza, on reducing neonatal infections. It found that immunizing mothers before birth significantly lowered the risk of sepsis in newborns by providing passive immunity through the placenta. Nurses were identified as key facilitators in this process, responsible for educating expectant mothers about the benefits of vaccination and ensuring that vaccines were administered correctly. The research emphasized that nurses must possess strong knowledge of immunization schedules and their role in neonatal health, as timely maternal vaccinations can prevent serious infections in newborns. This highlights the need for continuous education for nurses regarding the latest immunization guidelines and

infection prevention strategies to optimize neonatal outcomes (Department of Health, 2019; Philippine Society of Newborn Medicine, 2019).

Methodology

1. *Research Design*

A descriptive-correlational method was utilized in this study to systematically investigated the phenomena of nurses' knowledge and practices regarding neonatal sepsis prevention. As outlined by Combes (2009), this research design served two primary purposes: first, it provided a detailed description of the specific characteristics and practices of the study population; second, it examined the relationships between different variables. This approach allowed for the identification of patterns and correlations among key factors, such as the socio-demographic profiles of nurses and their corresponding knowledge and practices related to neonatal sepsis prevention (Leon AJTD, Jumalon RL, Chavez JV, et al.,2024). By employing this method, the study aimed to yield insights that could inform improvements in nursing practices and ultimately enhance neonatal care. This research design was employed to describe and assess the correlation among the study variables: 1.) Socio-demographic profile of nurses assigned in SCABU, OB WARD, NON-BASIC WARD, and PEDIATRIC WARD at Sulu Sanitarium General Hospital in terms of age, gender; civil Status, length of Service; and employment status; 2.) Nurses' level of knowledge and practices in neonatal sepsis prevention in terms of hygiene practices; sterilization and disinfection, antibiotic prophylaxis and recognizing Risk/signs and symptoms; 3.) Significant difference in the level of nurses knowledge and practices in neonatal sepsis prevention when data were grouped according to socio demographic profile; and 4.) Significant correlation among the subcategories subsumed under nurses' knowledge and practices in neonatal sepsis prevention.

2. *Research Participants*

The research participants consisted of 47 nurses from four specific areas of the Sulu Sanitarium General Hospital—7 from the Special Care Baby Unit (SCABU), 11 from the OB Ward, 15 from the Non-Basic Ward, and 14 from the Pediatric Ward—who were directly involved in the care of neonates diagnosed with or suspected of having neonatal sepsis, with a census de jure sampling technique employed to ensure comprehensive data collection from every nurse in these designated wards, capturing a complete picture of their knowledge and practices regarding neonatal sepsis prevention.

3. *Research Instruments*

A modified questionnaire based on the work of Arabi et al., (2021) was utilized in this study. The questionnaire was structured into two distinct parts. Part I focused on the demographic profile of the participants, while Part II assessed nurses' knowledge and practices regarding the prevention of neonatal sepsis. This section included five items in each of the following subscales: hygiene practices, sterilization and disinfection, antibiotic prophylaxis, and recognizing risks, signs, and symptoms. Responses were measured using a four-point Likert scale, with 1 represented the lowest level of agreement and 4 represented the highest.

4. *Data Gathering Procedure*

The procedure of the study began with looking for literatures on the topic of interest. A questionnaire was made out of the review. Possibly, a modified (adapted) survey questionnaire from Arabi et al (2021). Ethical approval for the conduct of the study was obtained from the hospital's ethics committee to ensure the study adheres to ethical standards. Next, participants were recruited by identifying nurses working in the relevant unit at Sulu Sanitarium and General Hospital. The survey questionnaire was then be administered to the selected nurses, allowing for the collection of completed responses. Once data is gathered, it was analyzed using appropriate statistical methods to uncover insights. The results were interpreted to draw conclusions, focusing on any significant relationships between socio-demographics,

knowledge, and practices. Finally, a comprehensive report was prepared, summarizing the study's findings, limitations, and recommendations for future practice and research.

5. *Data Analysis*

Descriptive statistics were utilized to identify the socio-demographic characteristics of the nurses, summarizing variables like age, gender, civil status, and employment status through frequencies and percentages. To assess the nurses' understanding and actions related to neonatal sepsis prevention across various subscales, measures of central tendency, namely the mean and standard deviation, were employed to illustrate the average values and the spread of the data. Additionally, to Investigate if there were notable differences in the levels of knowledge and practices according to socio-demographic profiles, ANOVA was utilized for comparing mean scores among various groups, whereas a t-test for independent samples was employed for gender comparisons. To investigate potential correlations among the various subcategories of nurses' knowledge and practices, Pearson correlation analysis was conducted. The analysis adopted a specific rating scale to interpret the results yielded by both descriptive and inferential statistical tools, with the following intervals: a score of 3.50-4.00 indicating "Strongly agree" and reflecting a "Very knowledgeable" level, a score of 2.50-3.49 indicating "Agree" and a "Knowledgeable" level, a score of 1.50-2.49 indicating "Disagree" and a "Somewhat knowledgeable" level, and a score of 1.00-1.49 indicating "Strongly disagree," reflecting a "Not knowledgeable" level.

Results and Discussion

Question 1:What is the socio-demographic profile of nurses in terms of; 1.1 age; 1.2 gender; and 1.3 marital status, 1.4 length of service, and 1.5 employment status?

The sociodemographic profile of the nurses assigned to Sulu Sanitarium General Hospital is shown in **Table 1.1,** broken down by age. This figure shows that, of the 47 respondents, 22 (46.8%) are under the age of 29, and 25 (53.2%) are between the ages of 30 and 39. This indicates that over half of the respondents are middle-aged, with the remaining respondents being in their early adult years.

Age

Age	Number of Respondents	Percent
29 and below	22	46.8
30-39	25	53.2
Total	47	100.0

The sociodemographic profile of the respondents by gender is displayed in **Table 1.2.** This table shows that 43 (91.5%) of the 47 responders are female, and 4 (8.5%) are male. This indicates that women make up the majority of study participants, which is significantly greater than the number of male respondents. In the nursing profession, where women often make up a bigger fraction of the workforce, especially in areas like maternity and child health, this gender trend is in line with more general trends. The predominance of female nurses may reflect traditional gender roles and societal expectations within healthcare, especially in areas related to childbirth and newborn care. Additionally, the underrepresentation of male nurses in this field could be an area of consideration for future recruitment strategies, ensuring diversity and inclusivity within the nursing workforce.

Gender

Gender	Number of Respondents	Percent
Male	4	8.5
Female	43	91.5
Total	47	100.0

The sociodemographic profile of the respondents according to their civil status is shown in **Table 1.3.** This table shows that among the 47 respondents, just one (2.1%) is

widowed, 25 (53.2%) are married, and 21 (44.7%) are single. This indicates that over 50% of the Those who participated in this study are married.

Civil Status

Civil Status	Number of Respondents	Percent
Single	21	44.7
Married	25	53.2
Divorce	1	2.1
Total	47	100.0

According to length of service, the respondents' sociodemographic profile is shown in **Table 1.4**. This figure shows that of the 47 respondents, 15 (31.9%) had less than one year of experience, 25 (53.2%) had one to five years of employment, and just 7 (14.9%) had six to six years of employment. This indicates that over 50% of the study participants have five years of experience as nurses providing newborn care.

Length of Service

The sociodemographic profile of the respondents with regard to employment status is

Length of Service	Number of Respondents	Percent
1 yr and below	15	31.9
1-5	25	53.2
6-10	7	14.9
Total	47	100.0

shown in **Table 1.5**. From this table, it can be seen that, of the 47 responders, 14 (29.8%) are permanent, 32 (68.1%) are under job orders, and only 1 (2.1%) are volunteer nurses. This indicates that over one-fourth of the respondents have permanent status, and over half of the respondents are dominated by employment instructions.

Employment Status

Employment Status	Number of Respondents	Percent
Permanent	14	29.8
Job order	32	68.1
Volunteer	1	2.1
Total	47	100.0

Question 2. *What is the level of knowledge and practice of nurses in neonatal sepsis prevention in terms of; 2.1 hygiene and practice; 2.2 sterilization and disinfection; 2.3 antibiotic prophylaxis; and 2.4 recognizing risk and signs and symptoms?*

Table 2.1 shows the level of knowledge and practice of nurses in neonatal sepsis prevention in terms of hygiene and practice. As revealed in this table, this sub-category obtained a total weighted mean score of 3.8170 with standard deviation of .35097 which is rated as Strongly agree or with as Very Knowledgeable. Respondents expressed agreement that hygiene and practice affects the health of the newborn by decreasing transfer of infection through hand washing, maintaining sterile technique, and use of personal protective equipment before and after touching the newborn.

Hygiene and Practice

Hygiene and Practice	**N**	**Mean**	**Std. Deviation**	**Rating**
1.I am knowledgeable about proper hand hygiene techniques to prevent neonatal sepsis.	47	3.8511	.46526	Strongly agree

2.I understand the importance of maintaining a sterile environment in neonatal care.	47	3.9362	.24709	agree	Strongly
3.I regularly perform hand hygiene before and after caring for a newborn.	47	3.8298	.43335	agree	Strongly
4.I am aware of the guidelines for using personal protective equipment (PPE) in neonatal care.	47	3.8085	.49512	agree	Strongly
5.I participate in training sessions on infection control and hygiene practices.	47	3.7447	.56982	agree	Strongly
OVERALL MEAN		**3.8170**	**.35097**	**agree**	**Strongly**

Legend: (4) 3.50-4.00=Strongly Agree(SA); (3) 2.50-3.49=Agree(A); (2) 1.50-2.49=Disagree (D); (1) 1.00-1.49=Strongly Disagree (SD)

Table 2.2 shows the level of knowledge and practice of nurses in neonatal sepsis prevention in terms of sterilization and disinfection. As revealed in this table, this sub-category obtained a total weighted mean score of 3.6723 with standard deviation of .49944 which is rated as Strongly agree or as Very Knowledgeable. Respondents expressed agreement that sterilization and disinfection affects the health of the new born by being familiar with the protocols for sterilization and disinfection of medical equipment, apply appropriate methods for disinfecting surfaces in the neonatal unit, regularly checking the sterilization processes are followed, differentiate between cleaning, disinfection, and sterilization in healthcare settings and being aware of the recommended disinfectants for use in the neonatal unit.

Sterilization and Disinfection

Sterilization and Disinfection	**N**	**Mean**	**Std. Deviation**		**Rating**
1. I am familiar with the protocols for sterilization and disinfection of medical equipment.	47	3.5319	.62035	agree	Strongly
2. I know the appropriate methods for disinfecting surfaces in the neonatal unit.	47	3.5319	.65445	agree	Strongly
3. I regularly check that sterilization processes are followed for all medical instruments used in neonatal care.	47	3.5106	.68754	agree	Strongly

4.	I understand the difference between cleaning, disinfection, and sterilization in healthcare settings.	47	3.7021	.58662	Strongly agree
5.	I am aware of the recommended disinfectants for use in the neonatal unit.	47	3.5106	.68754	Strongly agree
	OVERALL MEAN		3.6723	.49944	Strongly agree

Legend: (4) 3.50-4.00=Strongly Agree(SA); (3) 2.50-3.49=Agree(A); (2) 1.50-2.49=Disagree (D); (1) 1.00-1.49=Strongly Disagree (SD)

Table 2.3 shows the level of knowledge and practice of nurses in neonatal sepsis prevention in terms of antibiotic prophylaxis. As revealed in this table, this sub-category obtained total weighted mean score of 3.587 with standard deviation of .53796 which is rated as Strongly agree or as Very Knowledgeable. Respondents expressed agreement that antibiotic prophylaxis affects the health of the newborn by following guidelines for antibiotic prophylaxis in at-risk neonates, correct timing and dosage for administering antibiotics, assessing the risk factors for neonatal sepsis when determining the need for antibiotic prophylaxis, being familiar with the common antibiotics used for prophylaxis, and discussing with caregivers antibiotic use and potential side effects with parents of at-risk neonates.

Antibiotic Prophylaxis

	Antibiotic Prophylaxis	**N**	**Mean**	**Std. Deviation**	**Rating**
1.	I understand the guidelines for antibiotic prophylaxis in at-risk neonates.	47	3.7234	.53981	Strongly agree
2.	I am aware of the correct timing and dosage for administering antibiotics to prevent neonatal sepsis.	47	3.8298	.48090	Strongly agree
3.	I regularly assess the risk factors for neonatal sepsis when determining the need for antibiotic prophylaxis.	47	3.6170	.57306	Strongly agree
4.	I am familiar with the common antibiotics used for prophylaxis in neonatal care.	47	3.5745	.65091	Strongly agree
5.	I discuss antibiotic use and potential side effects with parents of at-risk neonates.	47	3.6170	.60982	Strongly agree
	OVERALL MEAN		**3.5872**	**.53796**	**Strongly agree**

Legend: (4) 3.50-4.00=Strongly Agree(SA); (3) 2.50-3.49=Agree(A); (2) 1.50-2.49=Disagree (D); (1) 1.00-1.49=Strongly Disagree (SD)

Table 2.4 shows the level of knowledge and practice of nurses in neonatal sepsis prevention in terms of recognizing risks and signs. As revealed in this table, this sub-category obtained a total weighted mean score of 3.5574 with standard deviation of .57776 which is rated as Strongly agree or as Very Knowledgeable. Respondents expressed agreement that recognizing risk and signs of neonatal sepsis can help in the disease management. Recognizing these early indicators can lead to prompt intervention, which is essential in reducing the morbidity and mortality rates associated with neonatal sepsis. This highlights that nurses understand the central role early detection plays in improving neonatal outcomes.

Recognizing risks and signs

Recognizing risk and signs		Mean	Std. Deviation	Rating
1. I can identify the risk factors associated with neonatal sepsis.	7	.5957	3.60	.613 Strongly agree
2. I am trained to recognize early signs and symptoms of neonatal sepsis.	7	.4255	3.39	.744 agree
3. I regularly monitor newborns for changes in behavior that may indicate infection.	7	.6596	3.88	.599 Strongly agree
4. I am familiar with the clinical guidelines for assessing neonates at risk for sepsis.	7	.5957	3.08	.577 Strongly agree
5. I understand the significance of laboratory findings in diagnosing neonatal sepsis.	7	.6596	3.08	.635 Strongly agree
OVERALL MEAN		**.5574**	**3.76**	**.577 Strongly agree**

Significant at alpha 0.05

Question 3: Is there a significant difference in the level of knowledge and practice of nurses in neonatal sepsis prevention in terms of 3.1 age, 3.2 gender, 3.3 marital status,3.4 length of service, and 3.5 employment status?

When data are classified by age and sociodemographic profile, **Table 3.1** shows the variations in nurses' knowledge and practices regarding neonatal sepsis prevention. This table indicates that all of the subcategories included in this scale have F-ratios and P-values that are not significant at alpha.05. This indicates that while the respondents' ages fluctuate, their levels of knowledge and practice on the prevention of newborn sepsis remain consistent. This finding suggests that nurses' knowledge and skills in preventing neonatal sepsis may not be age-dependent, regardless of their age.

Group of Age

SOURCES OF VARIATION		Sum of Squares	df	Mean Square	F	Sig.	Description
Hygiene and Practice	Between Groups	.051	1	.051	.411	.525	Not significant
	Within Groups	5.615	45	.125			
	Total	5.666	46				
	Between Groups	.364	1	.364	1.093	.301	Not significant

Sterilization and Disinfection	Within Groups	14.991	45	.333			
	Total	15.355	46				
Antibiotic Prophylaxis	Between Groups	.410	1	.410	1.669	.203	Not significant
	Within Groups	11.064	45	.246			
	Total	11.474	46				
Recognizing Risk/Signs and Symptoms	Between Groups	.149	1	.149	.508	.480	Not significant
	Within Groups	13.164	45	.293			
	Total	13.312	46				

*Significant at alpha 0.05

When data are classified by gender and sociodemographic profile, **Table 3.2** shows the variations in nurses' knowledge and practice of neonatal sepsis prevention. This table shows that all of the subcategories that fall under the umbrella of nurses' knowledge and practice in preventing newborn sepsis have mean differences and P-values that are not significant at alpha.05. This indicates that despite the respondents' gender differences, there is no difference in their level of nursing knowledge or practice for the prevention of newborn sepsis.

Group of Gender

Variables	**Grouping**	**Mean**	**SD**	**Mean Difference**		**Sig.**	**Description**
Hygiene and Practice	Male	3.8000	.23094	-.01860	.100	.921	Not significant
	Female	3.8186	.36204				
Sterilization and Disinfection	Male	3.6500	.34157	.10116	332	.742	Not significant
	Female	3.5488	.59697				
Antibiotic Prophylaxis	Male	3.6500	.47258	-.02442	.093	.927	Not significant
	Female	3.6744	.50714				
Recognizing Risk and Signs and Symptoms	Male	3.6000	.56569	.01395	049	.961	Not significant
	female	3.5860	.54230				

*Significant at alpha 0.05

Table 3.3 presents the differences in the level of knowledge and practice of nurses in neonatal sepsis prevention when data are grouped according to socio-demographic profile in terms of Marital status. It can be gleaned from this table the value of F-ratios and *P*-values of all other sub-categories subsumed under level of knowledge and practice of nurses in neonatal sepsis prevention are not significant at alpha .05. This means that, although respondents vary in marital status, still they do not differ in their level of knowledge and practice of nurses in neonatal sepsis prevention. The result implies that marital status—whether a nurse is married, single, or widowed—does not provide any advantage or disadvantage in terms of their understanding or practices related to neonatal sepsis prevention.

Group of Martial Status

*Significant at alpha 0.05

SOURCES OF VARIATION		Sum of Squares	df	Mean Square	F	Sig.	Description
hygiene and practice	Between Groups	.041	2	.020	.159	.853	Not significant
	Within Groups	5.626	44	.128			
	Total	5.666	46				
sterilization and disinfection	Between Groups	.201	2	.100	.292	.748	Not significant
	Within Groups	15.154	44	.344			
	Total	15.355	46				
antibiotic prophylaxis	Between Groups	.145	2	.072	.281	.757	Not significant
	Within Groups	11.330	44	.257			
	Total	11.474	46				
recognizing risk and signs and symptoms	Between Groups	.192	2	.096	.323	.726	Not significant
	Within Groups	13.120	44	.298			
	Total	13.312	46				

Table 3.4 presents the differences in the level of knowledge and practice of nurses in neonatal sepsis prevention when data are grouped according to socio-demographic profile in terms of length of service. It can be gleaned from this table the value of F-ratios and *P*-values of all other sub-categories subsumed under level of knowledge and practice of nurses in neonatal sepsis prevention are not significant at alpha .05. This means that, although respondents vary in length of service, still they do not differ in their level of knowledge and practice of nurses in neonatal sepsis prevention. This result implies that years of service as nurse may not necessarily put a respondent in a vantage point in difference in level of knowledge and practice of nurses in neonatal sepsis prevention than those who have an experience of less than a year or vice versa. This could mean that having more years of experience as a nurse does not necessarily translate to a better understanding or more effective practice of neonatal sepsis prevention.

Length of Service

SOURCES OF VARIATION			Sum of Squares	df	Mean Square		Sig.	Description
Hygiene and Practice	Between Groups	Between Groups	.068	2	.034	.268	.766	Not significant
		Within Groups	5.598	44	.127			
		Total	5.666	46				
Sterilization and Disinfection	Between Groups	Between Groups	1.312	2	.656	.055	.140	Not significant
		Within Groups	14.043	44	.319			
		Total	15.355	46				
Antibiotic Prophylaxis	Between Groups	Between Groups	.349	2	.175	.690	.507	Not significant
		Within Groups	11.125	44	.253			
		Total	11.474	46				
Recognizing Risk and Signs and Symptoms	Between Groups	Between Groups	.113	2	.057	.189	.828	Not significant
		Within Groups	13.199	44	.300			
		Total	13.312	46				

*Significant at alpha 0.05

Table 3.5 presents the differences in the level of knowledge and practice of nurses in neonatal sepsis prevention when data are grouped according to socio-demographic profile in terms of employment status. It can be gleaned from this table the value of F-ratios and *P*-values of all other sub-categories subsumed under level of knowledge and practice of nurses in neonatal sepsis prevention are not significant at alpha .05. This means that, although respondents vary in employment status, still they do not differ in their level of knowledge and practice of nurses in neonatal sepsis prevention. This result implies that being employed either permanent, contractual or job order nurses may not necessarily put a respondent in a vantage point in difference in level of knowledge and practice of nurses in neonatal sepsis prevention. This means that regardless of the type of employment, nurses are equally equipped with the knowledge and practices needed for neonatal sepsis prevention.

Employment of status

*Significant at alpha 0.05

4. Is there a significant correlation among the subcategories subsumed under nurses' level of knowledge and practices in neonatal sepsis prevention?

Table 4 illustrates the correlation among the sub-categories subsumed under nurses' level of knowledge and practices in neonatal sepsis prevention in terms of hygiene practice, sterilization and disinfection, antibiotic prophylaxis, and recognizing risks and signs and symptoms. It can be gleaned from this table that the computed Pearson Correlation Coefficients (Pearson r) among these variables are indeed significant at alpha .05.

SOURCES OF VARIATION		**Sum of Squares**	**Df**	**Mean Square**		**ig.**	**Description**
hygiene and practice	Between Groups	.000		.000	002	998	Not significant
	Within Groups	5.666	4	.129			
	Total	5.666	6				
sterilization and disinfection	Between Groups	.141		.070	203	817	Not significant
	Within Groups	5.214	4	.346			
	Total	5.355	6				
antibiotic prophylaxis	Between Groups	.025		.012	048	954	Not significant
	Within Groups	1.449	4	.260			
	Total	1.474	6				
recognizing risk and signs and symptoms	Between Groups	.346		.173	588	560	Not significant
	Within Groups	2.966	4	.295			
	Total	3.312	6				

Variables	**Hygiene And Practice**	**Sterilization And Disinfection**	**Antibiotic Prophylaxis**	**Recognizing Risk And Signs And Symptoms**

Pearson Correlation	1	.677**	.752**	.761**
Sig. (2-tailed)		**.000**	**.000**	**.000**
Description		***High***	***Very high***	***Very high***

Correlation Coefficient Scales Adopted from Hopkins, Will (2002):
0.0-0.1=Nearly Zero; 0.1-0.30=Low; .3-0.5 0=Moderate; .5-0.7-0=High; .7-0.9= Very High; 0.9-1=Nearly Perfect

CONCLUSION

The Respondents involved in this study are adequately represented in terms of age, gender, marital status, length of service, and employment status. Generally, the knowledge and practice in the prevention of neonatal sepsis does not differ in their socio-demographic profile such as age, gender, marital status, length of service and employment status. Most of the respondents who assessed the nurses' level of knowledge and practices in neonatal sepsis prevention in all four subcategories rated Strongly Agree or as Very Knowledgeable. This implies that nurses assigned caring for the neonates a very knowledgeable in terms of hygiene and practice, sterilization and disinfection, antibiotic prophylaxis, and recognizing risks and signs and symptoms. Furthermore this study seems to support the Health Belief Model (HBM) and theory of reasoned action. These theories suggests that nurses who perceive neonatal sepsis as a serious threat and believe that their actions can effectively prevent it are more likely to follow recommended practices consistently.

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