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Awareness and Availment of Perinatal Care Services by Reproductive Mothers in Naga City

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Abstract

Aim: This study assessed the awareness and availment of perinatal care services among reproductive mothers in Naga City.

Methodology: This study used a mixed-method concurrent research design, incorporating surveys and qualitative interviews. Data were collected from 226 postpartum mothers across 14 barangays, with 10 participants involved in qualitative interviews.

Results: The study revealed high awareness and availment of perinatal care services among reproductive mothers, indicating positive perceptions and utilization across all phases. Statistical analyses demonstrated a positive correlation between awareness and availment. Factors influencing awareness and availment included accessibility to free medicines and healthcare services, effective dissemination of information, high-quality services, and a sense of safety and security. Limited capacity at health facilities was identified as a hindering factor.

Conclusion: The findings underscore the importance of sustaining and enhancing current levels of awareness. The study suggests a comprehensive sustainability plan focusing on Information, Education, and Communication (IEC) strategies to promote behavior change and align with Sustainable Development Goal (SDG) targets related to maternal and child health.

Keywords: awareness and availment/utilization of perinatal care services, reproductive mothers

INTRODUCTION

Perinatal care, which spans from late pregnancy to the early weeks post-childbirth, plays a vital role in maternal and infant healthcare by addressing unique health needs and vulnerabilities during this period. Perinatal care services aim to safeguard the well-being of mothers and infants through a personalized and thorough approach. This period is marked by significant physiological, emotional, and social changes, making it imperative to provide specialized care that addresses the diverse needs of expectant mothers and promotes positive maternal and infant outcomes. In this context, perinatal care services span a spectrum of interventions, from routine pregnancy progress monitoring to managing complications, health education, and preventive measures.

Acknowledging the importance of perinatal care at an individual level, it becomes imperative to broaden our perspective to a global scale and evaluate the status of perinatal care services worldwide. While notable advancements have occurred in various regions, disparities in accessing high-quality perinatal care persist globally. In low and middle-income countries, challenges such as insufficient healthcare infrastructure, a shortage of skilled healthcare providers, and socio-economic disparities impede optimal perinatal care services (WHO, 2021; Palshetkar & Palshetkar, 2020). The World Health Organization (WHO) and other international organizations have addressed these disparities, advocating for evidence-based guidelines and interventions to enhance global perinatal outcomes. However, the COVID-19 pandemic has brought to light vulnerabilities in perinatal care systems, with disruptions in healthcare services and heightened risks for pregnant individuals (WHO, 2021).

Over the years, various global initiatives, from the Alma Ata Declaration on Primary Health Care (PHC) in 1978 to the Millennium Development Goals (MDGs) in 2000 and the Sustainable Development Goals (SDGs) in 2015, have been launched to tackle maternal and child health challenges. However, despite these efforts, progress has often needed to catch up (Balahadia-Mortel & Nisperos, 2022). Examining the global landscape aligns with local

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realities, such as those observed in the Philippines, where challenges in accessing antenatal care (ANC) services persist, particularly in upland and geographically isolated areas referred to as GIDA. Pregnant women in these regions face barriers, including limited healthcare access, transportation challenges, and cultural and social constraints (Jaymalin, 2021). The United Nations Population Fund Philippines (UNFPA-Phil) reports that approximately 14% of pregnant women in the country lack regular check-ups and essential medical care, with one in ten women not giving birth in healthcare facilities or receiving professional assistance during childbirth (Patag, 2023). Furthermore, while there has been a decline in the percentage of Filipino women aged 15 to 19 experiencing pregnancies, dropping from 8.6 percent in 2017 to 5.4 percent in 2022, the country still faces unique challenges compared to other ASEAN nations, particularly concerning high teenage pregnancy rates (PSA, 2023; de la Peña, 2022).

Additionally, the Philippines faces a pressing issue of increasing maternal deaths linked to childbirth complications, highlighting the critical need to evaluate the utilization of perinatal care services. Data from the Philippine Statistics Authority (PSA) shows a concerning trend, with a 10 percent rise in childbirth complications in 2022 alone. Specifically, there were 468 recorded maternal deaths in the first half of 2022, marking an increase from the 425 deaths reported during the same period in the previous year (ABS-CBN News, 2022). The maternal mortality ratio (MMR) in the country, which was supposed to decrease from 209 deaths per 100,000 live births in the 1990s to 52 deaths by 2015, instead rose to 108 deaths by the end of 2022 (Ordinario, 2020; NEDA, 2022). Despite these challenges, there are ongoing efforts to improve maternal health outcomes. The National Economic and Development Authority (NEDA) projects a reduction in MMR from 144 in 2020 to 74 by 2028 under the Philippine Development Plan (PDP) 2023-2028 (NEDA, 2023).

Meanwhile, the Sustainable Development Goals 2030 set by the United Nations aims to lower the global maternal mortality ratio to less than 70 per 100,000 live births (WHO, 2024). Recognizing the persistent high MMR in the Philippines, organizations like the Philippine Commission on Women (PCW) have contributed through initiatives such as the Gender Equality and Women's Empowerment Plan 2019-2025 (PCW, 2020). These efforts are crucial in addressing the immediate health challenges and fostering long-term societal change (Sanchez, et al., 2024). They empower women and ensure access to quality healthcare services, thus contributing significantly to communities' overall development and well-being.

Concurrently, the Philippine Maternal, Newborn, Child Health, and Nutrition (MNCHN) service strategy outlined in DOH A.O. 2008-0029 has been instrumental in ensuring every pregnancy is wanted, planned, and effectively managed. This strategy promotes facility-based deliveries with skilled birth attendants and ensures proper postpartum and postnatal care for mothers and newborns (DOH, 2018). Recent legislative efforts, such as Senate Bill No. 148 and the Maternity Benefit for Women in the Informal Economy Act, signify a commitment to aligning national policies with international standards like the Magna Carta of Women (Republic Act 9710) (CHR, 2023). However, challenges persist, as highlighted by the Commission on Human Rights (CHR), which emphasizes excluding women in the informal sector from benefits under Republic Act No. 11210, the 105-Day Expanded Maternity Leave Law (Ayalin, 2023). These imperatives underscore the ongoing need to comprehensively address perinatal care disparities within specific regions, aiming to enhance maternal and infant health outcomes. The efforts signify a potential starting point for discourse aimed at improving overall perinatal care and healthcare equity across diverse sectors of society.

Another significant challenge lies in data collection, particularly considering the unique circumstances faced by the Bicol Region and Naga City. Despite the region's commendable efforts in addressing teenage pregnancies, boasting a rate of only 2.4% compared to the national average of 5.4%, there has been a concerning rise in repeat pregnancies within the city, escalating from 39 cases in 2020 to 56 in 2021, and further to 62 in 2022, highlighting the critical need for robust data collection strategies (Montales, 2023; Neola, 2023)—socio-economic factors coupled with limited healthcare access compound these challenges. The recent DSWD Listahanan 3 poverty database underscores the vulnerability of unemployed and young women in the working-age group, particularly in Camarines Sur, where about nine (9) percent of households face economic challenges (DSWD, 2023; Calipay, 2022), which could affect access to perinatal care services. Metropolitan Naga, as a commercial hub and medical center, accommodates a significant population, including about 118 thousand active beneficiaries under the Pantawid Pamilyang Pilipino Program (4Ps), which has implications for institutional data on perinatal care services (Bernadas, 2023). Existing hospital-centric data may need to fully capture the diverse sources of perinatal care utilization, such as birthing homes, maternity clinics, and community-based midwives (DOH, 2022).

According to a recent examination of the Philippine health system, all these challenges are complex, stemming from inefficiencies within the health system, such as disorganized governance, fragmented financing, and decentralized service delivery (Dayrit et al., 2018). Overlapping spending by entities like PhilHealth, the Department



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of Health (DOH), and local government health facilities on maternal and child health services contributes to confusion and inefficiencies, leading to a stagnant maternal mortality ratio. As such, addressing these complexities is crucial for developing targeted interventions that comprehensively address the challenges faced by reproductive mothers in accessing adequate perinatal care services and improving overall maternal health outcomes in the community.

Thus, the present study emphasizes the need to broaden the scope of investigation beyond hospital data, recognizing that reproductive mothers in Naga City may seek perinatal care from various sources. Understanding this diverse demographic's needs and circumstances is crucial for developing evidence-based strategies and interventions. By addressing their availment of perinatal services, the study aims to improve perinatal care utilization, ultimately enhancing maternal health outcomes and overall well-being in Naga City.

Objectives

This study determined the awareness and availment of perinatal care services among reproductive mothers residing in Naga City.

Specifically, the study sought to address the following research questions:

1. What is the level of awareness on perinatal care services among the reproductive mothers along the following phases:
 - 1.1. Prenatal Care;
 - 1.2. Intrapartal Care; and
 - 1.3. Postpartal Care?
2. What is the degree of availment of perinatal care services by reproductive mothers?
3. Does the level of awareness significantly influence the degree of availment of perinatal care services?
4. What other factors contribute to the awareness and availment of perinatal care services among reproductive mothers?
5. What sustainability plan may be proposed based from the results of the study?

Hypothesis

The study posits that the level of awareness has a significant impact on the degree of availment of perinatal care services.

METHODS

Research Design

This study adopted a mixed-method concurrent research design to explore perinatal care awareness and availment among reproductive mothers in Naga City. The quantitative segment employed a descriptive-correlational approach, using standardized tools to assess awareness and availment levels and examining how awareness influences availment.

On the other hand, the qualitative aspect utilized semi-structured interviews to explore the intricate factors influencing the main variables in depth. This methodological choice is particularly effective as it facilitates data triangulation, ensuring a more comprehensive understanding of contextual factors that quantitative data alone might miss, thereby informing sustainability plans. Furthermore, the concurrent design facilitated correlation analysis and ensured that the qualitative data collected complements and enriches the quantitative findings.

Population and Sampling

The study purposively selected two-hundred and twenty-six (226) reproductive postpartum mothers from the low flatland barangays of Naga City who had utilized prenatal, intrapartal, and postpartal services during the October to November 2023 delivery period. The study used this sampling approach to achieve several objectives: ensuring representation from specific geographic areas to simplify logistics, leveraging higher population densities to obtain representative samples, addressing gaps in urban healthcare research, and enabling a more focused analysis due to population homogeneity. The selection criteria for survey participants included (a) having experienced at least one pregnancy, (b) being aged between 15 and 45 years old, and (c) being a resident of the studied barangay.

The study used volunteer sampling to select interview participants, choosing those interested after completing surveys, with a maximum limit of ten (10) participants.

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Instrument

The study utilized a survey questionnaire and interview checklist as its primary research instruments, focusing on assessing the level of awareness and extent of availment of perinatal care services among reproductive mothers in Naga City's low flatland areas. The questionnaire, comprising closed-ended and Likert scale questions, gathered data on awareness levels sourced from UNICEF (2022), WHO (2018), and DOH's MNCHN Manual of Operations (2011) while availment data aligned with similar sources. The survey and interview questions were rigorously validated and pre-tested to ensure reliability and cultural sensitivity. Results from the pilot reliability test indicated excellent internal consistency across dimensions, affirming the robustness and validity of the measurement tools used to evaluate perinatal care awareness and availment among participants.

Data Collection

The researcher obtained permission from the Graduate School Dean, City Health Office, Barangay Captains, and Health Officers to conduct the study and acquired personalized consent letters from primary respondents. Contact was established with Barangay Captains from 23 barangays for the purposive selection of participants, with 14 barangays included in the final analysis due to logistical challenges. She established a makeshift office near the Barangay Hall and approached mothers meeting the criteria for participation. She briefed participants, had them complete questionnaires, and provided tokens of gratitude. She retrieved completed questionnaires daily, compiled the data, entered it into statistical software, analyzed it, and interpreted the results for the final manuscript.

Treatment of Data

The researcher analyzed quantitative data from the survey questionnaire using descriptive statistics, including mean and average mean calculations for closed-ended and Likert scale questions. Aggregated Likert scale responses assessed the overall awareness and availment levels, employing Pearson r correlation coefficient analysis to explore relationships between key variables. The qualitative analysis involved coding responses from 10 participants to identify recurring themes and sub-themes, with verbatim feedback carefully reviewed to uncover nuanced factors influencing perinatal care awareness and utilization. Themes were synthesized and contextualized with relevant research to deepen understanding of the data.

Ethical Considerations

The researcher diligently addressed ethical considerations to safeguard participants' rights and well-being. The study adhered to strict ethical protocols, including obtaining informed consent, ensuring confidentiality through data anonymization, and obtaining ethical approval from the committee.

RESULTS and DISCUSSION

The study assessed the awareness and availment of perinatal care services among reproductive mothers by examining ten (10) indicators for each phase, totaling 30 indicators for awareness and 30 for availment. Summary tables for each phase included only the highest and lowest-ranked indicators.

Level of Awareness of Perinatal Care Services

Along with awareness of prenatal care services (Table 1.1), the top indicator, rated as "Very High," includes prenatal check-ups by healthcare workers (M=3.59). In contrast, the last indicator, also rated as "Very High" but with slightly lower mean scores, includes immunization with tetanus toxoid and diphtheria vaccines at the start of pregnancy (M=3.47).

Table 1.1
 Level of Awareness of Prenatal Care Services among Reproductive Mothers

Prenatal Care Services	M	Interpretation
Rank 1 st : Prenatal care check-up is done by the healthcare workers in the healthcare facility during the pregnancy.	3.59	Very High
Rank Last (10 th): Immunization with tetanus toxoid and diphtheria vaccines at the start of pregnancy.	3.47	Very High



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Meanwhile, along with awareness of intrapartal care services (Table 1.2), the top indicator, rated as "Very High," includes the presence of healthcare professionals during delivery (M=3.52). In contrast, the last indicator, also rated as "Very High" but with slightly lower mean scores, includes emotional support and coaching during labor (M=3.42).

Table 1.2

Level of Awareness of Intrapartal Care Services among Reproductive Mothers

Intrapartal Care Services	M	Interpretation
Rank 1 st : Presence of healthcare professionals during delivery.	3.52	Very High
Rank Last (10 th): Emotional support and coaching during labor.	3.42	Very High

Lastly, along with awareness of postpartal care services (Table 1.3), the top indicator, rated as "Very High," includes health education on infant care and immunization for a Fully Immunized Child (FIC) by healthcare workers (M=3.57). In contrast, the last indicator, also rated as "Very High" but with slightly lower mean scores, includes psychoemotional assessment for signs of postpartum psychosis by healthcare workers (M=3.47).

Table 1.3

Level of Awareness of Postpartal Care Services among Reproductive Mothers

Postpartal Care Services	M	Interpretation
Rank 1 st : Health education on infant care and immunization of the baby to be a Fully Immunized Child (FIC) before reaching one year old is conducted by the healthcare workers.	3.57	Very High
Rank Last (10 th): Psychoemotional assessment to determine possible signs of postpartum psychosis is done by healthcare workers.	3.45	Very High

Overall, Table 1.4 reveals that mean scores for prenatal, intrapartal, and postpartal care services were 3.53, 3.49, and 3.49, respectively, all falling under the "Very High" interpretation category.

Table 1.4

Summary Table of the Level of Awareness of Perinatal Care Services among Reproductive Mothers

Perinatal Phase	Mean	Interpretation
Prenatal Care Services	3.53	Very High
Intrapartal Care Services	3.49	Very High
Postpartal Care Services	3.49	Very High
Mean	3.5	Very High

Legend: M (Mean), 1.00-1.75 (Very Low), 1.76-2.50 (Low), 2.51-3.25 (High), 3.26 -4.00 (Very High)

The study's results show high awareness among reproductive mothers regarding perinatal care services in Naga City. Mean scores across prenatal, intrapartal, and postpartal care phases fell within the "Very High" category, indicating strong recognition of key care components. Notable indicators included regular prenatal check-ups, healthcare professionals' presence during delivery, and infant care and immunization education. While all indicators scored high, slight variations suggest areas for potential improvement, particularly in immunization and emotional support during labor. The findings highlight a favorable awareness landscape, with opportunities for targeted enhancements in specific care areas.

The study's results suggest that the targeted interventions, educational programs, and healthcare initiatives aimed at enhancing awareness and availment of perinatal care services have been successful. Reproductive mothers in the study demonstrate a strong understanding of the importance of perinatal care throughout the various phases of pregnancy, delivery, and postpartum recovery. This understanding is crucial as it can lead to improved maternal



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and infant health outcomes, reduced risks during pregnancy and childbirth, and better postpartum recovery for mothers. Additionally, the exceptionally high average mean score signifies a comprehensive and holistic approach to perinatal care awareness among the study participants, highlighting the effectiveness of healthcare strategies in addressing the needs of reproductive mothers regarding perinatal care services.

The very high level of awareness observed across various aspects of perinatal care services, including prenatal, intrapartur, and postpartur phases, aligns with findings from foreign studies. For instance, Abegaz and Habtewold (2019) identified a significant increase in the proportion of antenatal care (ANC) utilization in Ethiopia over the years, indicating an overall high level of awareness and utilization of prenatal care services. Similarly, Steele et al. (2021) explored factors influencing ANC attendance among women in Uganda. They found that despite challenges, there was a generally high awareness and utilization of prenatal care services in the region. These findings suggest a positive trend towards increased awareness and utilization of perinatal care services, reflecting maternal healthcare access and education improvements.

In contrast, specific deficiencies may exist despite the overall high awareness of perinatal care services. Local studies such as Reyes et al. (2020) and Sande (2022) reveal low utilization rates of maternity care packages and ANC services among pregnant women in the Philippines, indicating potential disparities in access to comprehensive prenatal care services. Furthermore, studies like Felipe-Dimog et al. (2021) and Ong et al. (2022) emphasize challenges such as poor compliance with iron and folic acid supplementation recommendations and gaps in knowledge among healthcare professionals regarding newborn screening, which may impact the quality of perinatal care provided. These contrasts underscore the importance of addressing specific areas of deficiency within the broader context of high overall awareness of perinatal care services.

Degree of Availment of Perinatal Care Services

Along with the availment of prenatal care services (Table 2.1), the top indicator, rated as "Very High," includes weight and Leopold's maneuver used to assess the baby's development (M=3.57). In contrast, the last indicator, also rated as "Very High" but with slightly lower mean scores, includes receiving tetanus toxoid and diphtheria vaccines at pregnancy start (M=3.48).

Table 2.1

Degree of Availment of Prenatal Care Services among Reproductive Mothers

Prenatal Care Services	M	Interpretation
Rank 1 st : My weight was measured, and Leopold's maneuver was performed to assess the development and position of the baby.	3.57	Very High
Rank Last (10 th): I received proper doses of tetanus toxoid and diphtheria vaccines at the beginning of my pregnancy.	3.48	Very High

Meanwhile, along with the availment of intrapartur care services (Table 2.2), the top indicator, rated as "Very High," includes experiencing skin-to-skin contact with the baby post-delivery (M=3.57). In contrast, the last indicator, also rated as "Very High" but with slightly lower mean scores, includes receiving care from healthcare professionals ensuring safety during delivery (M=3.52).

Table 2.2

Degree of Availment of Intrapartur Care Services among Reproductive Mothers

Intrapartur Care Services	M	Interpretation
Rank 1 st : I was able to experience skin-to-skin contact or the <i>unang yakap</i> with my baby right after my delivery.	3.57	Very High
Rank Last (10 th): I was attended by the physician and nurse midwives during my delivery to ensure the safety of me and my baby.	3.52	Very High

Lastly, along with the availment of postpartur care services (Table 2.3), the top indicator, rated as "Very High," includes taught baby care and the importance of immunization before one year (M=3.55). In contrast, the last



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indicator, also rated as "Very High" but with slightly lower mean scores, includes a psychoemotional assessment done to assess adaptation to postpartum changes (M=3.47).

Table 2.3

Level of Awareness of Postpartal Care Services among Reproductive Mothers

Postpartal Care Services	M	Interpretation
Rank 1 st : I was taught by the health workers how to take care of my baby and instructed to bring my baby to the health center to be fully immunized before reaching one year old.	3.55	Very High
Rank Last (10 th): A psychoemotional assessment was done on me to ensure that I can handle the changes related to my delivery.	3.46	Very High

Overall, Table 2.4 reveals that mean scores for prenatal, intrapartal, and postpartal care services were 3.53, 3.54, and 3.52, respectively, all falling under the "Very High" interpretation category.

Table 2.4

Summary Table of the Degree of Availment of Perinatal Care Services among Reproductive Mothers

Perinatal Phase	Mean	Interpretation
Prenatal Care Services	3.53	Very High
Intrapartal Care Services	3.54	Very High
Postpartal Care Services	3.52	Very High
Mean	3.53	Very High

Legend: M (Mean), 1.00-1.75 (Very Low), 1.76-2.50 (Low), 2.51-3.25 (High), 3.26 -4.00 (Very High)

The study results indicate a high degree of availment of perinatal care services among reproductive mothers in Naga City. Mean scores across prenatal, intrapartal, and postpartal care phases were consistently rated as "Very High," reflecting robust utilization of essential care components. Key indicators such as weight assessment, skin-to-skin contact post-delivery, and education on baby care and immunization showcased intense availment levels. While all indicators demonstrated high utilization, minor variations suggest areas for potential refinement, particularly in vaccine availment and psychoemotional assessment post-delivery. Overall, the findings underscore a positive trend in perinatal care service utilization, with opportunities for targeted improvements in specific care domains to further enhance maternal and infant health outcomes.

The implications of the results are significant. The consistently high levels of utilization and effectiveness across all phases of the perinatal period reflect a positive trend. Specifically, the high mean scores signify robust engagement with recommended perinatal care practices. These findings highlight the strong commitment of reproductive mothers to participate in and benefit from comprehensive perinatal care actively. Such high levels of availment and utilization underscore the effectiveness of healthcare services in these areas and emphasize the importance of promoting maternal and infant health throughout the perinatal period. These encouraging results positively impact the overall well-being of reproductive mothers and their infants in Naga City.

Abegaz and Habtewold (2019) reported increased antenatal care utilization trends in Ethiopia over time, indicating potential similarities in healthcare access dynamics between regions. Kim et al. (2019) identified social stigma as a barrier to antenatal care in Senegal, a factor that may differ from Naga City's social dynamics. Similarly, studies in Rwanda (Nisingizwe et al., 2020) and South Africa (Erasmus et al., 2020) highlighted perceived barriers and societal attitudes influencing maternal healthcare access, potentially affecting utilization patterns. Al Daajani et al. (2020) and Alanazy and Brown (2020) identified barriers to antenatal care access in Saudi Arabia, resonating with potential challenges. In contrast, Tumuhimbise et al. (2020) and Wulandari et al. (2021) explored maternal health services barriers in Uganda and Indonesia, respectively, likely influenced by differing cultural contexts and healthcare systems. Lastly, Steinbrook et al. (2021) emphasized geographical and economic factors affecting ANC attendance in Uganda, differing from Naga City's urban setting. Locally, Gonzales (2021) found a significant correlation between prenatal care quality and maternal-fetal attachment in Occidental Mindoro, suggesting effective perinatal care's



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potential positive impact on bonding, corresponding with the study's high availment. Conversely, Collado (2019) identified healthcare access challenges in Jomalig Island, contrasting with Naga City's high availment, suggesting urban-rural differences. Sande's (2022) Bicol study revealed socio-demographic challenges in ANC utilization, resonating with potential Naga City perinatal care barriers. Lastly, Sebastian et al.'s (2022) nutrition education study emphasized targeted interventions' importance in maternal and child health, relevant to enhancing Naga City's perinatal care services.

Influence of Awareness on the Availment of Perinatal Care Services by Reproductive Mothers

Table 3 analyzed the impact of awareness levels on perinatal care availment among reproductive mothers across prenatal, intrapartur, postpartur, and overall care aspects. The results demonstrated a strong correlation between awareness and availment in all perinatal care phases. For instance, prenatal care showed a Pearson correlation coefficient of .800, indicating a significant relationship with a 64% explained variability. Similar strong correlations were found for intrapartur ($r = .834$, 69.55% explained variability), postpartur ($r = .870$, 75.69% explained variability), and overall awareness and availment ($r = .902$, 81% explained variability).

Table 3

Influence of the Level of Awareness on the Degree of Availment of Perinatal Care Services by Reproductive Mothers

Aspects of Awareness and Availment	Pearson Correlation	r ²	%	Interpretation
Prenatal	.800	0.64	64	very highly significant
Intrapartur	.834	0.6955	69.55	very highly significant
Postpartur	.870	0.7569	75.69	very highly significant
Overall Awareness and Availment	.902	0.81	81%	very highly significant

Legend: $p \leq 0.001$ very highly significant, $p \leq 0.01$ highly significant, $p \leq 0.05$ significant, $p > 0.05$ not significant

The findings underscore the crucial role of awareness levels in influencing the utilization of perinatal care services among reproductive mothers. The strong correlations observed across prenatal, intrapartur, postpartur, and overall care aspects highlight the interconnectedness between awareness and availment in the perinatal care continuum. Specifically, the high Pearson correlation coefficients and the substantial percentage of explained variability indicate that a significant proportion of the variation in perinatal care utilization can be attributed to awareness levels. This emphasizes the importance of targeted awareness programs and interventions to enhance knowledge and understanding of perinatal care services among expectant and new mothers.

The results reveal a significant link between awareness and perinatal care utilization among reproductive mothers in Naga City, which is crucial for DOH Philippines' efforts to reduce maternal and neonatal mortality rates by 2030. Increasing awareness correlates with higher service utilization, emphasizing the importance of deploying additional healthcare personnel, promoting antenatal care, and improving healthcare facilities. The study's insights are vital for monitoring and enhancing existing programs, guiding policymakers to target interventions, and improving maternal and child health outcomes. Naga City's Ordinance No. 2014-033 on maternal and newborn child health and nutrition (MNCHN) services and alignment with SDGs have been critical in addressing service gaps and reducing mortality rates. Although significant gaps existed in service availment, initiatives like the ordinance have led to substantial progress, indicating positive impacts from awareness campaigns and effective perinatal care availment aligned with SDG targets.

Foreign studies, including Adeyemi (2019) in Nigeria, Al Daajani et al. (2020) in Saudi Arabia, and Tumuhimbe et al. (2020) in Uganda, explore factors influencing maternal healthcare choices and barriers to antenatal care (ANC) availment. These studies, alongside research in Senegal, rural Uganda, and Ethiopia, likely reveal associations between awareness and ANC utilization. Locally, Gonzales (2021) and Ong et al. (2022) highlight correlations between prenatal care quality and maternal-fetal attachment and awareness of newborn screening in the Philippines. However, challenges like deferred visits due to COVID-19, transportation issues, and financial constraints, as found in studies by De Guzman & Banal-Silao (2022) and Sande (2022), were separate from the correlation



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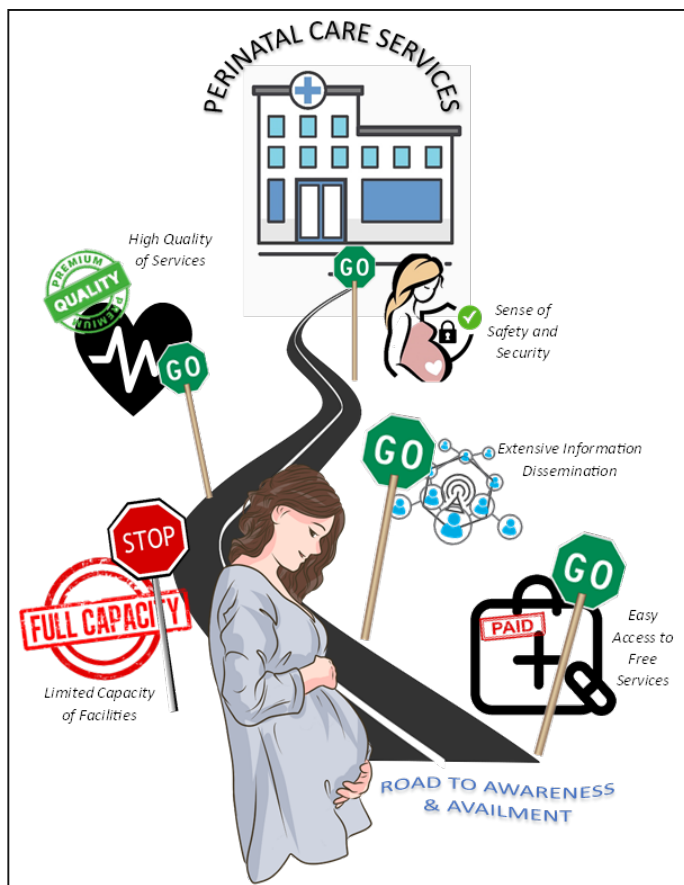
analysis. Comparing these findings provides a nuanced view of the awareness-availment relationship in perinatal care across diverse research contexts.

Other factors influencing awareness and availment

Based on the qualitative data provided, the contributing factors affecting the awareness and availment of perinatal care services among reproductive mothers can be categorized into facilitating factors and hindering factors, as illustrated creatively in Figure 1. The researcher found four (4) facilitating factors and only one (1) hindering factor.

Figure 1

Factors Influencing awareness and availment according to interviews with 10 reproductive mothers



The five (5) themes found were easy access to free services, extensive information dissemination, high quality of services, a sense of safety and security, and limited capacity of facilities. Only limited healthcare facility

capacity posed a hindrance to awareness and availment of perinatal care services. The first four themes were facilitating factors.

The mothers appreciated the easy access to free perinatal care services, including medicines, tests, and vaccines. They value extensive information dissemination through various channels, such as health workers' visits and online resources. Positive experiences with healthcare providers and a sense of safety and security also contribute to their utilization of healthcare facilities. However, limited capacity at some facilities poses challenges in scheduling check-ups. These insights underscore the importance of accessible, high-quality, and safe perinatal care services to encourage consistent utilization among mothers.

The findings underscore the critical role of healthcare-provider relationships in perinatal care utilization, echoing sentiments from both local and international studies (Drigo et al., 2020; Luu et al., 2022; Erasmus et al., 2020; Wulandari et al., 2021). Respondents' positive interactions with healthcare professionals who actively inform them about available services align with research emphasizing the impact of provider attitudes and communication on ANC service utilization (Drigo et al., 2020). Positive perceptions of comprehensive services and supportive environments during delivery reflect broader themes found in studies across different regions, emphasizing the significance of trust in

healthcare facilities and continuity of care in postnatal phases (Nwosu & Ataguba, 2019; Sanieel et al., 2021). Moreover, the study's insights into factors influencing perinatal care decisions, such as accessibility, safety concerns, and reliance on community health workers, echo findings from various local and international investigations, highlighting the need for tailored strategies to enhance maternal healthcare access (Adeyemi, 2019; Collado, 2019; Kim et al., 2019; Sande, 2022).

Proposed Sustainability Plan

The proposed sustainability plan aims to maintain and enhance awareness and availment of perinatal care services among reproductive mothers in Naga City. It focuses on developing and implementing Information,



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Education, and Communication (IEC) strategies aligned with SDG 3 targets to reduce maternal and child mortality. The plan includes creating comprehensive IEC materials, distributing them widely, conducting training for healthcare providers, monitoring impact, and collaborating with stakeholders for sustainability. Ultimately, the goal is to strengthen perinatal care services, improve maternal and child health outcomes, and contribute to achieving SDG 3 goals.

Table 4 presents a detailed plan for implementing Information, Education, and Communication (IEC) strategies to improve maternal and child health. The plan spans twelve months and involves various responsible parties like the Researcher, Design Team, Outreach Team, Training Facilitators, and Collaboration Team. Tasks include developing IEC materials, distributing them, conducting training for healthcare providers, establishing monitoring tools, and collaborating with stakeholders. Expected outcomes include increased awareness and availment of perinatal care, empowered healthcare providers, improved maternal health, and a sustainable IEC strategy. Implementation involves research, design collaboration, channel identification, module development, monitoring tool setup, data analysis, and stakeholder engagement, with a budget allocation of PHP 210,000.

Table 4
Matrix of Proposed Sustainability Plan

Task	Timeline	Responsible Parties	Description	Expected Outcomes	Implementation Steps	Budget (PHP)
Develop IEC Materials	Months 1-3	Researcher and Design Team	Create visually appealing and informative materials highlighting perinatal care	Comprehensive materials emphasizing perinatal care	1. Conduct research on perinatal care best practices and SDG 3 targets. 2. Collaborate with the design team to create visually appealing and informative IEC materials.	50,000
Distribute IEC Materials	Months 4-6	Outreach Team	Distribute materials through various channels to reach the target audience	Increased awareness and availment of perinatal care	1. Identify distribution channels (health centers, community events, digital platforms). 2. Distribute materials to the target audience in Naga City.	30,000
Healthcare Provider Training	Months 7-9	Training Facilitators	Conduct training sessions for healthcare providers on using IEC materials	Empowered healthcare providers	1. Develop training modules on using IEC materials effectively. 2. Conduct training sessions for healthcare providers.	70,000
Monitoring and Evaluation	Months 10-12	Researcher and Evaluation Team	Establish monitoring tools and collect data to assess the impact of the IEC strategy	Improved maternal health outcomes	1. Establish monitoring tools (surveys, interviews, data collection forms). 2. Collect and analyze data on awareness and availment of perinatal care.	40,000
Collaboration with Stakeholders	Ongoing	Researcher and Collaboration Team	Engage with stakeholders for sustainable and scalable IEC strategy	Sustainable and scalable IEC strategy	1. Engage with NGOs, community-based organizations, and private sector partners. 2. Collaborate on initiatives to promote maternal and child health.	20,000



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Conclusions

Reproductive mothers in Naga City demonstrated very high levels of availment across prenatal, intrapartal, and postpartal care services, indicating a solid utilization of perinatal care resources.

The study revealed a correlation between higher awareness among reproductive mothers and increased availment of perinatal care services, with awareness explaining a significant portion of the variability in service utilization across all phases of care.

Facilitating factors such as easy access to free services, extensive information dissemination, high-quality services, and a sense of safety and security were identified, highlighting the positive impact of supportive healthcare environments on service utilization.

Recommendations

Future research could delve into healthcare providers' perspectives and further explore barriers to accessing perinatal care services. It would complement efforts in developing a sustainable Information, Education, and Communication (IEC) plan crucial for maintaining and enhancing awareness and availment of such services. This plan's implementation should prioritize utilizing multimedia strategies to reach a broader audience and stimulate engagement with perinatal care information. Collaborating with community leaders remains imperative to promote awareness and encourage local communities' active utilization of these services while ensuring cultural sensitivity in all materials and interventions to address diverse needs effectively. Moreover, providing specialized training for healthcare professionals will significantly improve service delivery, contributing to positive maternal and child health outcomes. Establishing robust monitoring systems to track progress and identify areas for refinement can help ensure the plan's effectiveness.

Additionally, forging partnerships with relevant stakeholders, including government agencies, NGOs, and private sector entities, will facilitate the pooling of resources and expertise to advance perinatal care initiatives effectively. Given the prevalent use of technology among target audiences, utilizing digital platforms for information dissemination and engagement is crucial. Empowering mothers through education and support will equip them with the knowledge and confidence to make informed decisions about their perinatal care and maternal health.

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