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Breastfeeding Compliance and Associated Factors Among First-Time Mothers at A Government Hospital in Urdaneta City, Pangasinan: A Cross-Sectional Study

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A B S T R A C T

Background: The World Health Organization advocates for the exclusive provision of breast milk to infants during the initial six months of their life.[2]. However, compliance with this recommendation varies widely across different populations and is influenced by a complex interplay of demographic, psychosocial, and cultural factors. [3,10,13,22,23]. This study is designed to delve into the intricacies of breastfeeding practices among first-time mothers in Urdaneta City, Pangasinan, focusing on understanding how various factors contribute to compliance rates within this demographic.

Methods: Using a cluster sampling approach, a quantitative cross-sectional study was conducted among 150 participants at a government hospital in Urdaneta City, Pangasinan in November 2023. These statistical methods, namely Pearson Chi-square and Pearson's correlation, were employed to analyse and comprehend the associations and relationships.

Results: Most participants were aged 25 to 29 years (nearly 80%), with "Single" (55.3%) and "Married" (42.7%) statuses dominating. A significant proportion fell within lower to middle-income brackets, primarily earning below 9100 PHP (36.0%) and between 18,200 to 36,400 PHP (26.0%). "Full-time" employment (34.7%) and "College Graduates" (36.7%) constituted the largest segments in employment and educational status, respectively. Data shows that respondents are highly compliant with breastfeeding behaviours post-delivery (GWA=3.87). Breastfeeding knowledge scores reflected high awareness of its benefits and health advantages for both mother and baby (GWA=3.87), aligning strongly with health workers' recommendations on exclusive breastfeeding and proper techniques (GWA=4.24). Psychosocial factors revealed high confidence in managing breastfeeding challenges and satisfaction with the experience (GWA=4.24). Income, age, education, and employment are strongly associated with breastfeeding compliance, notably, income exhibiting the strongest correlation (R=0.513, p=0.000). This underscores income's substantial influence on adherence to breastfeeding practices among first-time mothers in this setting.

Conclusions: Most respondents exhibited high compliance with recommended breastfeeding behaviours post-delivery. This high compliance is notably reflected in their strong adherence to exclusive breastfeeding and proper techniques, as recommended by health workers, and a robust understanding of the benefits of breastfeeding. Additionally, participants displayed high confidence in managing breastfeeding challenges, indicating satisfaction with their overall breastfeeding experience.

The study identifies income as a particularly influential factor, significantly correlating with breastfeeding compliance. This highlights the pivotal role of economic status in shaping adherence to breastfeeding practices among these first-time mothers. Overall, the findings emphasize the importance of considering various demographic factors in developing tailored interventions to further support and enhance breastfeeding practices among this demographic.

Keywords: Mother-Baby Friendly, Antenatal care, Infant Nutrition, Cross-sectional study

1. Introduction

Breastfeeding is universally acknowledged as the optimal method of infant feeding, providing numerous health benefits to both the infant and the mother [1]. The World Health Organization advocates exclusive breastfeeding for the first six months of life[2]. However, compliance with this recommendation varies widely across different populations and is influenced by a complex interplay of demographic, psychosocial, and cultural factors[3,10,13,22,23].

Sustainable Development Goals (SDGs), mainly SDG 2 (Zero Hunger) and SDG 3 (Good Health and Wellbeing), entail that among all the various essential aspects of attaining improved nutrition through numerous interventions, strengthening breastfeeding practices can be one of the best ways to help achieve the desirable outcomes (Elechi et al., 2023). As per the World Health Organization (WHO), this problem can be addressed explicitly

through diligent planning to make breastfeeding, the clinical gold standard for infant feeding and nutrition, a preferred practice for mothers (Darboe et al., 2023)

Research has shown that exclusive breastfeeding and its determinants are critical for the health and development of infants, as well as for the well-being of mothers (NdumOkwen et al., 2022) [4]. Factors associated with breastfeeding rates and duration, especially after NICU discharge, have been a subject of study, highlighting the unique challenges faced by first-time mothers of preterm infants (Jiang & Jiang, 2022) [5].

The environment and support systems, such as rooming-in practices, have been identified to significantly affect the duration of breastfeeding among first-time mothers (Wu et al., 2022)[6]. Moreover, the impact of breastfeeding on the sexual lives of first-time mothers has been explored to understand the broader implications of breastfeeding practices (Kul Uçtu&Karakoç, 2022)[7]. The success of breastfeeding in the context of epidural analgesia during labor has also been investigated, providing insights into medical interventions and breastfeeding outcomes (Tan et al., 2018) [8].

Cultural and psychosocial factors, including the role of peer support, have been found to influence breastfeeding compliance, with studies emphasizing the importance of proactive support for first-time mothers (McLardie-Hore et al., 2022)[9]. Additionally, the intentions and motivations behind breastfeeding have been linked to various psychosocial and sociodemographic factors (Baumgartner et al., 2020) [10]. The experiences of first-time mothers who have undergone assisted conception also contribute to the understanding of breastfeeding practices, as these experiences may differ from those of mothers who conceived naturally (Díaz Sáez et al., 2021)[11].

This study is designed to delve into the intricacies of breastfeeding practices among first-time mothers in Urdaneta City, Pangasinan, focusing on understanding how various factors contribute to compliance rates within this demographic. The research aims to provide a comprehensive demographic profile of the respondents, including age, marital status, average monthly income, and the occupation of mothers. Such demographic data are crucial as they have been shown to influence breastfeeding practices and are often associated with the level of breastfeeding compliance (Gonzales, 2020)[12]. The level of compliance to breastfeeding among first-time mothers in government hospitals in Urdaneta City is a central concern of this study. Previous research has indicated that institutional policies, the support provided by healthcare facilities, and the quality of postnatal care can significantly impact breastfeeding compliance (Wu et al., 2022) [6]. Furthermore, the study will assess the associated factors regarding breastfeeding among first-time mothers, particularly their knowledge of breastfeeding and their actual practices. The knowledge and attitudes of mothers towards breastfeeding have been identified as key determinants of whether and how long they breastfeed (NdumOkwen et al., 2022[4]).

Finally, the study seeks to determine if there is a significant relationship between the level of compliance to breastfeeding and associated factors among first-time mothers, as grouped into the demographic profile. This aspect of the study is particularly important as it may reveal patterns and predictors of breastfeeding compliance, which could be targeted in public health interventions to improve breastfeeding rates. By addressing these objectives, the study aims to contribute valuable insights into the factors that influence breastfeeding among first-time mothers in Urdaneta City, Pangasinan. The findings could inform the development of tailored interventions and support systems to promote better health outcomes for infants and mothers in this community and similar settings.

2. Methods

2.1 Study Design and Site

This quantitative cross-sectional study was conducted at a government hospital situated at Urdaneta City, Pangasinan.

2.2 Participants and Sampling

The participants of this study were carefully selected from a specific demographic group: first-time mothers caring for an infant between the ages of 0 and 2 years at the government hospital in Urdaneta City, Pangasinan, particularly in the Outpatient Department and in the OB Ward to accommodate different demographics such as age groups, income levels, and educational backgrounds. Structured questionnaires with closed-ended questions were used to gather data. Variables were measured using a 5-point Likert scale.

2.3 Data Collection Procedures

We administered the questionnaire to eligible patients currently present at the hospital during the survey period. Participants were ensured confidentiality and privacy of their responses. Informed consent was also obtained from the respondents before answering the questionnaire.

2.4 Tool development and measures

The questionnaire utilized in this study underwent adaptation and modification, drawing upon established frameworks and guidelines from reputable sources. It was crafted by integrating elements gleaned from authoritative bodies such as the Department of Health (DOH), Centers for Disease Control and Prevention (CDC), Breastfeeding Self-Efficacy Scale-Short Form (BSES-SF), World Health Organization (WHO), and United Nations Children's Fund (UNICEF). Additionally, contents were also adapted and modified from the Antenatal Care Form from the BHFI (Baby-Friendly Hospital Initiative) 20-hour course of 2009.

Before the main data collection, a pilot survey was conducted at a primary hospital in Tanauan City, Batangas with 12 respondents to validate the questionnaire, ensuring that the questions are clear and that the survey is reliable and valid. The pre-test Cronbach's alpha coefficient is 0.874, which indicates good internal consistency. The Cronbach's alpha coefficient of 0.963, attained in the final validation of the questionnaire, represents a notably high level of internal consistency.

2.5 Statistical analyses

The Statistical Product and Service Solutions (SPSS 26.0) was utilized for the statistical analyses. Jamovi 2.4.8 was utilized for the demographics.

2.6 Ethics

Informed Consent Form is included in the questionnaire used in this study, which stipulates inclusions on the purpose of the research, study procedures, privacy and confidentiality, voluntary participation, and researcher's contact information for questions regarding the study.

The questionnaire has 3 sections. Section A shows the Demographic profile of the respondents which include age (ranges below 18 to 49 years old), marital status (single, married, annulled, widowed), average monthly income (ranges below PHP 9100- PHP 109,200 and above), employment status (unemployed, part-time, fulltime, freelance or self-employed) and educational status (no formal education, ALS, preschool/kinder, high school level/junior high or senior high level, high school graduate/ senior high graduate, vocational, college level, college graduate, higher education).

5-point Likert scales were used for the questionnaire. Section B has 5 questions intended to measure the level of compliance to breastfeeding practices after delivery (not compliant to fully compliant). Section C has 3 parts that are intended to measure the selected associated factors for the study. The first part has 9 questions that measure the knowledge of the participant regarding breastfeeding. (totally unaware to totally aware). The 2nd part, which has 7 questions, shows the health service factors (strongly disagree to strongly agree) which describe the provision of health teaching during the antenatal and postnatal period. The last part assesses the psychosocial factors with 8 questions, which merely measure the self-efficacy of the participant when it comes to breastfeeding her infant (not at all confident to always confident).

3. Results

Table 1. Demographic characteristics of participants (N=150)

Demographic Characteristics	**Number (%)**
Age	
Below 18 years old	15 (10.0 %)
18 to 24 years old	35 (23.3 %)
25 to 29 years old	70 (46.7 %)
30 to 34 years old	16 (10.7 %)
35 to 39 years old	9 (6.0 %)
40 to 44 years old	5 (3.3 %)
Marital status	
Single	83 (55.3%)
Married	64 (42.7%)
Annulled	1 (0.7%)
Widowed	2 (1.3%)
Average Monthly Income	
Below 9100 PHP	54 (36%)
PHP 9100 - PHP 18,200	23 (15.3%)
PHP 18,200 - PHP 36,400	39 (26%)
PHP 36,000 - PHP 63,700	31 (20.7%)
PHP 63,700 - PHP 109,200	3 (2%)
Employment status	
Freelance or self-employed	24 (16%)
Unemployed	48 (32%)
Part-time	26 (17.3%)
Fulltime	52 (34.7%)
Educational status	

No Formal Education	7 (4.7 %)
Alternative Learning System (ALS)	6 (4.0 %)
Preschool/Kindergarten	2 (1.3 %)
Elementary	10 (6.7 %)
Highschool level/ Junior High level/ Senior High Level	18 (12.0 %)
Highschool graduate/ Senior High Graduate	22 (14.7 %)
Vocational	7 (4.7 %)
College Level	20 (13.3 %)
College Graduate	55 (36.7 %)
Higher Education	3 (2.0 %)

Table 1 presents the demographic characteristics of the participants, detailing the number and percentage distribution within each category of age, marital status, average monthly income, employment status, and educational status.

The demographic profile of the participants, comprising 150 individuals, showcases a varied distribution across several key categories. In terms of age, most participants fall within the range of 25 to 29 years old, representing 46.7% of the sample, followed by those between 18 to 24 years old, accounting for 23.3%. Relatively smaller proportions are distributed among other age groups, with 10.7% between 30 to 34 years old and fewer percentages in the older brackets, such as 6.0% between 35 to 39 years old and 3.3% aged 40 to 44 years old.

Regarding marital status, a notable majority are classified as single, constituting 55.3% of the sample, while the married participants represent 42.7%. The remaining participants include a small number who are either annulled (0.7%) or widowed (1.3%).

When examining average monthly income, the largest segment falls below 9100 PHP, accounting for 36% of the participants. Subsequent income brackets show a declining distribution, with 15.3% falling within the range of PHP 9100 to PHP 18,200, 26% between PHP 18,200 to PHP 36,400, 20.7% ranging from PHP 36,000 to PHP 63,700, and a minor 2% above PHP 63,700 to PHP 109,200.

In terms of employment status, the sample displays diversity, with 34.7% engaged in full-time employment, 32% being unemployed, 17.3% in part-time roles, and 16% identified as freelance or self-employed individuals.

Educational status unveils a varied educational background among the participants. The highest representation is seen among college graduates, accounting for 36.7% of the sample, followed by high school graduates/senior high graduates at 14.7%, college-level education at 13.3%, and high school level/junior high level/senior high- level education at 12.0%. Smaller percentages are distributed among categories such as elementary education, vocational training, and individuals with no formal education or alternative learning system (ALS) backgrounds, each constituting less than 10% of the total sample.

Table 2. Compliance of First-time Mothers to Breastfeeding Practices after delivery

	$\bar{x}$	**Interpretation**
I breastfeed my baby within 1 hour after birth	3.83	Highly compliant
I do not feed my baby with formula milk and water	3.81	Highly compliant
I do not give artificial teats or pacifier to my baby	3.77	Highly compliant
I breastfeed my baby on demand, as often as my baby wants	3.93	Highly compliant
I remained with my baby 24 hours a day while in the hospital	4.01	Highly compliant
General Weighted Average	**3.87**	**Highly compliant**

Legend: 4.20-5.00 (Fully compliant), 3.40-4.19 (Highly compliant), 2.60-3.39 (Moderately compliant), 1.80-2.59 (Slightly compliant), 1.0-1.79 (Not Compliant), $\bar{x}$ (average)

Table 2 portrays the compliance levels of first-time mothers regarding various breastfeeding practices immediately after giving birth. Each practice, from initiating breastfeeding within an hour after birth to avoiding formula milk, artificial teats, and pacifiers, demonstrates notably high compliance levels. These results indicate a strong adherence among first-time mothers to recommended breastfeeding behaviors post-delivery. Despite slight

variations in individual responses, the overall trend illustrates a robust commitment to these crucial breastfeeding practices, suggesting a positive inclination among surveyed first-time mothers towards embracing and maintaining beneficial breastfeeding routines for their newborns.

Table 3. Level of associated factors with breastfeeding among first-time mothers in terms of knowledge

	x̄	**Interpretation**
Skin-to-skin contact between the mother and baby immediately after birth helps boost the mother's milk supply.	4.17	Aware
milk is the best source of nutrition for the babies.	4.32	Totally Aware
Good positioning and attachment help the baby to get lots of milk, and for mother to avoid sore nipples and sore breasts.	4.23	Aware
No other food or drink is needed by the baby for the first 6 months, only mother's milk.	4.23	Totally Aware
Babies who are breastfed have a lower risk of asthma, Obesity, Type 1 diabetes, Severe lower respiratory disease, Acute otitis media (ear infections), sudden infant death syndrome (SIDS) and Gastrointestinal infections (diarrhea/vomiting).	4.12	Totally Aware
Mothers who breastfeed their babies have a lower risk of Breast cancer, Ovarian cancer, Type 2 diabetes, and High blood pressure	4.07	Aware
Breastfeeding helps mother promotes bonding with the baby.	4.28	Totally Aware
Breast milk shares antibodies from the mother that help babies develop a strong immune system	4.25	Totally Aware
Use of artificial teats and pacifiers will cause nipple confusion.	4.00	Aware
General Weighted Mean	**4.19**	**Aware**

Legend: 4.20-5.00 (Totally aware), 3.40-4.19 (Aware), 2.60-3.39 (Neutral), 1.80-2.59 (Unaware), 1.0-1.79 (Totally Unaware)

Table 3 outlines the level of knowledge associated with breastfeeding among first-time mothers, focusing on various aspects related to breastfeeding practices and their awareness levels. The average scores for each statement range from 4.00 to 4.32, suggesting a high level 33 of awareness among these mothers regarding breastfeeding-related information. Statements such as the benefits of skin-to-skin contact after birth, the superiority of breast milk as a nutritional source, the health advantages for both the baby and mother, and the role of breast milk in sharing antibodies for a stronger immune system received notably high scores, categorizing them as "Totally Aware". These scores indicate a comprehensive understanding among first-time mothers regarding the benefits and significance of breastfeeding for both infant and maternal health. Overall, the general weighted mean of 4.19 indicates a consistently high level of awareness among these mothers concerning the essential aspects of breastfeeding.

Table 4 Level of associated factors with breastfeeding among first-time mothers in terms of Health Service

Health service factors	x̄	**Interpretation**
During my pregnancy and after delivery, the health worker has discussed the importance of exclusive breastfeeding to the baby.	4.23	Strongly Agree
During my pregnancy and after delivery, the health worker has discussed the importance of exclusive breastfeeding to mothers.	4.28	Strongly Agree
During my pregnancy and after delivery, the health worker has discussed the importance of immediate skin to skin contact of the mother and baby after birth.	4.27	Strongly Agree
During my pregnancy and after delivery, the health worker has discussed the importance of good positioning of the baby and proper attachment of the baby's mouth to the mother's nipple.	4.30	Strongly Agree
During my pregnancy and after delivery, the health worker has discussed the importance of continuing breastfeeding after 6 months while giving other foods to the baby.	4.23	Strongly Agree
During my pregnancy and after delivery, the health worker has discussed the risks and hazards of not breastfeeding the baby.	4.12	Agree
General weighted mean	**4.24**	**Strongly Agree**

Legends: 4.20-5.00 (Strongly Agree), 3.40-4.19 (Disagree), 2.60-3.39 (Neutral), 1.80-2.59 (Disagree), 1.0-1.79 (Strongly Disagree), x̄ (average)

This table illustrates the level of engagement and discussion by health workers regarding breastfeeding among expecting and new mothers. The topics covered include the importance of exclusive breastfeeding for both infants and mothers, immediate skin-to-skin contact after birth, proper positioning and attachment during breastfeeding, and the continuation of breastfeeding alongside introducing other foods after six months.

Most respondents strongly agreed that health workers engaged in these discussions, highlighting the significance of these conversations during pregnancy and after delivery. Additionally, while slightly lower, the rating of 4.12 for discussing the risks of not breastfeeding still falls within the 'Agree' range, indicating that there was generally positive engagement on this topic as well. Overall, the general weighted mean of 4.24 suggests a consistent and strong level of agreement among mothers regarding the discussions held by health workers regarding breastfeeding-related aspects.

Table 5Level of associated factors with breastfeeding among first-time mothers in terms of Psychosocial factors

Psychosocial factors	**x̄**	**Interpretation**
I can determine that my baby is getting enough milk.	4.17	Confident
I successfully cope with breastfeeding like I have with other challenging tasks	4.17	Confident
I manage the breastfeeding situation to my satisfaction.	4.21	Always Confident
I keep wanting to breastfeed.	4.28	Always Confident
I comfortably breastfeed with my family members present.	4.16	Confident
I am satisfied with my breastfeeding experience.	4.31	Always Confident
I can deal with the fact that breastfeeding can be time-consuming.	4.29	Always Confident
I manage to keep up with my baby's breastfeeding demands.	4.29	Always Confident
General weighted mean	**4.24**	**Always Confident**

Legend:4.20-5.00 (Always Confident), 3.40-4.19 (Confident),2.60-3.39 (Somewhat Confident), 1.80-2.59 (Not Confident), 1.0-1.79 (Not Confident at all), x̄ (average)

This table assesses the psychosocial factors associated with breastfeeding among first-time mothers. Across various aspects related to confidence, satisfaction, and management of breastfeeding, the average scores range from 4.16 to 4.31, indicating a high level of confidence and satisfaction among these mothers in their breastfeeding experiences. Additionally, they express high levels of comfort and satisfaction with the overall breastfeeding experience, including managing the time-consuming nature of breastfeeding and meeting their baby's demands.

The general weighted mean of 4.24 suggests that, on average, these first-time mothers feel 'Always Confident' in managing various psychosocial aspects related to breastfeeding. This indicates a positive and robust psychosocial foundation among these mothers, reflecting their ability to navigate and handle the different facets of breastfeeding with a high level of confidence and satisfaction.

Table 6 Associated Factor with Level of Compliance

Factors	**Likelihood Association**	**P-value**
Knowledge Factor	29.953	0.071
Health Service Factor	18.527	0.553
Psychosocial Factor	20.540	0.197
Age	46.273	0.000
Average monthly income	65.774	0.000
Educational Status	82.981	0.000
Employment Status	49.193	0.000
Marital Status	20.042	0.000

Table 6 presents a comprehensive analysis of various factors and their association with a particular outcome. Pearson's chi-square test was employed to analyze the dataset. Age, average monthly income, educational status, employment status, and marital status showcase notably strong associations with the outcome, all yielding extremely low p-values. This indicates a high level of significance, suggesting a robust relationship between these variables and the outcome under consideration. On the other hand, the knowledge factor demonstrates a moderate association with a relatively higher p-value, signifying a less conclusive link to the outcome. Similarly, the health service and psychosocial factors display lower associations and higher p-values, indicating a weaker or less defined connection with the outcome compared to the demographic factors. As additional, these results highlight the multifaceted nature of the outcome under study, suggesting that demographic variables like age, income, education, employment, and marital status play more pivotal roles in influencing the outcome compared to factors related to knowledge, health services, or psychosocial aspects.

Table 7 Correlation of Associated Factors to Breastfeeding Compliance

Associated Factors	R	Sig.	Relationship	Interpretation
Health Service Factors	0.015	0.852	No relationship	Not Correlated
Knowledge Factors	0.093	.257	No relationship	Not Correlated
Psychosocial Factors	0.026	0.753	No relationship	Not Correlated
Age	0.242	0.003	Low Relationship	Correlated
Marital Status	0.244	0003	Low Relationship	Correlated
Average Monthly Income	0.513	0.000	Moderate Relationship	Correlated
Educational Status	0.323	0.000	Low Relationship	Correlated
Employment Status	0.391	0.000	Low Relationship	Correlated

Legend: R (Correlation Coefficient)

The table presents correlation coefficients (R) and their corresponding significance levels (Sig.) for several factors associated with compliance regarding breastfeeding practices. These factors encompass health service-related aspects, knowledge-related elements, and psychosocial factors. The correlation coefficients provide insight into the strength and direction of the relationship, while the significance levels (p-values) determine the statistical significance of these relationships.

The analysis reveals that, across all factors—Health Service Factors, Knowledge Factors, and Psychosocial Factors—the correlation coefficients are notably low, ranging from 0.015 to 0.093. Additionally, the associated p-values are considerably higher than conventional thresholds of significance, ranging from 0.257 to 0.852. These high p-values suggest a lack of statistically significant relationships between these factors and the level of compliance with breastfeeding practices among the studied population.

Furthermore, a Demographic Profile analysis was conducted to further support the connection with adherence to breastfeeding. Among these factors, average monthly income emerges as the most influential determinant, displaying a notably moderate relationship with breastfeeding compliance. The data strongly suggests that higher average monthly income aligns with increased breastfeeding compliance. Findings imply that while factors like age, marital status, education, and employment do have an impact on breastfeeding compliance, their influence might not be as pronounced as the influence of income levels in determining breastfeeding practices. The data emphasizes how various factors intricately influence breastfeeding behaviour from different perspectives, emphasizing the importance of considering economic conditions alongside other demographic aspects when addressing and promoting breastfeeding practices.

In conclusion, the analysis suggests that, at the 5% significance level, the factors examined—health service-related, knowledge-related, and psychosocial factors—do not exhibit statistically significant relationships with the level of compliance regarding breastfeeding practices among the population under study.

Discussion

The demographic breakdown by age revealed a prevalent group aged 25 to 29, constituting 46.7% of the total sample, while notably, nearly 80% of these mothers were below 30 years old, indicating a pronounced concentration of youth within this cohort. Marital status delineated a dominance of "Single" mothers (55.3%) alongside "Married" mothers (42.7%), showcasing the diverse familial contexts among these individuals. Economic status, evident in the income brackets, highlighted a majority (36.0%) earning below 9100 PHP, emphasizing a prevalence within lower-income segments. Employment status portrayed a varied landscape, with "Full-time" employed mothers (34.7%), a substantial presence of "Unemployed" (32.0%), and a notable contingent of "Part-time" employed mothers (17.3%). Educational status unveiled a significant representation of "College Graduates" (36.7%) alongside "High School Graduates" (14.7%) and those at the "College Level" but incomplete (13.3%). Across different practices, such as initiating breastfeeding within an hour after birth and avoiding formula milk, artificial teats, and pacifiers, the mean and median scores consistently indicate strong adherence, hovering between 3.77 and 4 on a scale where 4 represents high compliance. These results highlight a robust commitment among first-time mothers to recommended breastfeeding behaviors, indicating a positive inclination towards embracing and sustaining beneficial breastfeeding routines for their newborns.

Assessment of associated factors revealed high knowledge scores (ranging from 4.00 to 4.32) emphasizing awareness of breastfeeding benefits and immune system enhancement through breast milk. Health service engagements garnered strong agreement scores (ranging from 4.12 to 4.30), accentuating discussions on exclusive breastfeeding and immediate skin-to-skin contact. Psychosocial factors reflected high ratings (ranging from 4.16 to 4.31) in confidence regarding milk intake determination and satisfaction with the breastfeeding experience. Furthermore, associations with

breastfeeding compliance underscored income, age, educational status, and employment status as influential factors, with likelihood association scores ranging notably from 18.527 to 82.981. Correlation analysis identified average monthly income as the most influential, demonstrating a moderate relationship (R=0.513, p=0.000) with breastfeeding compliance, followed by educational and employment statuses, age, and marital status. These comprehensive findings provide nuanced insights into the multifaceted determinants shaping breastfeeding practices among this cohort of first-time mothers.

Existing studies consistently underscore the profound influence of demographic variables on breastfeeding practices. Research findings consistently highlight the positive correlation between higher educational attainment and increased likelihood of breastfeeding, contrasting notably with lower rates observed among individuals with lower educational levels. Additionally, studies have revealed that among breastfeeding women, a notable proportion adheres to World Health Organization (WHO) recommendations, particularly within the demographics characterized by medium to high educational attainment and active employment. This echoes the link identified betweenemployment status and breastfeeding adherence in various studies. Furthermore, the literature emphasizes the positive association between part-time employment and moderate educational backgrounds with exclusive breastfeeding during the initial six months, aligning closely with the correlations observed in previous research. These recurrent patterns across multiple studies emphasize the pivotal role of socio-demographic factors in shaping breastfeeding behaviors, emphasizing the need for tailored interventions addressing diverse demographic contexts to promote and support breastfeeding practices. [13]

Mothers' knowledge and positive mindset significantly impact their breastfeeding practices [14]. A previous study indicated that mothers who possessed a deeper understanding of Exclusive Breastfeeding (EBF) were nearly six times more likely to adopt EBF compared to those with limited knowledge (OR 5.9; 95% CI 2.6, 13.3; $p < 0.001$) [21]. Furthermore, higher scores in breastfeeding knowledge (OR 1.09; 95% CI 1.04–1.14), attitude (OR 1.04; 95% CI 1.00, 1.09), and control over practice (OR 1.11; 95% CI 1.02, 1.20) were correlated with an increased prevalence of exclusive breastfeeding [15]." This study among first-time mothers demonstrates robustness through its comprehensive analysis of demographic profiles, knowledge levels, and associated factors. Its strengths lie in the diverse metrics used, offering a multifaceted understanding of influences on breastfeeding. However, limitations include the inability to establish causality due to a lack of controlled experiments and the study's omission of certain influential variables like cultural beliefs. Despite these constraints, the research offers valuable insights and calls for further investigation to refine its outcomes and broaden its applicability.

These hypotheses frame the investigation into the relationship between breastfeeding adherence and demographic factors among first-time mothers in Urdaneta City's government hospitals. The null hypothesis assumes no significant correlation between breastfeeding compliance and associated factors, while the alternative hypothesis proposes a meaningful link between the level of adherence to breastfeeding practices and the associated factors of these mothers. The study aimed to examine the degree of adherence to breastfeeding practices among first-time mothers at a government hospital in Urdaneta City, Pangasinan, while investigating the various factors associated withtheir compliance.In conclusion, the analysis suggests that, at the 5% significance level, the factors examined—health service-related, knowledge-related, and psychosocial factors—do not exhibit statistically significant relationships with the level of compliance regarding breastfeeding practices among the population under study.

Strengths and limitations

The study specifically aims to assess the level of compliance with breastfeeding practices among these mothers while investigating associated factors including their knowledge about breastfeeding, health service characteristics, and psychosocial aspects. However, several limitations warrant consideration. Potential sampling biases might arise if the sample doesn't entirely mirror the diverse population of first-time mothers in Urdaneta City, potentially affecting the study's generalizability. The reliance on self-reported data regarding knowledge and practices may introduce subjectivity and not entirely represent actual behaviors. Furthermore, the study's snapshot approach might overlook temporal changes in factors influencing breastfeeding practices, and constraints in resources, whether in terms of time, finances, or personnel, could limit the depth of analysis or data collection. While the findings will offer insights into Urdaneta City's first-time mothers, their direct applicability to other regions or different healthcare contexts might be limited due to potential variations in demographics, culture, and healthcare systems.

Conclusion

Data from respondents showed that First-time mothers at a government hospital in Urdaneta City, Pangasinan are highly compliant to breastfeeding behaviors post-delivery, suggesting a positive inclination among surveyed first-time mothers towards embracing and maintaining beneficial breastfeeding routines for their newborns. Statistics also indicate a consistently high level of awareness among these mothers concerning the essential aspects of breastfeeding. Factors examined—health service-related, knowledge-related, and psychosocial factors—do not exhibit statistically significant relationships with the level of compliance regarding breastfeeding practices among the population under study, while age, marital status, education, employment and lastly, average monthly income, which emerges as the most influential determinant, shown to have an impact on breastfeeding compliance.

Health workers play a pivotal role, necessitating continual discussions and comprehensive guidance during and after pregnancy. Timely and supportive encouragement remains crucial for nursing mothers, irrespective of their demographics. Addressing psychosocial concerns related to time management and confidence can strengthen mothers' resolve. Economic support initiatives targeted at lower-income backgrounds could positively impact adherence to breastfeeding practices. Longitudinal studies should explore evolving factors over time to refine sustained strategies for breastfeeding support.

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Authors' Contribution

ALT, SBM, ACG and JSB conceived and designed the study. ALT performed validation and reliability of the questionnaire. SBM collected the data. ALT conducted the statistical interpretation of the findings. ALT, SBM, ACG and JSB wrote the initial draft. ALT critically reviewed and finalized the manuscript. All authors read and approved the final version of this manuscript.

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Availability of data and materials

The data relating to this manuscript are available upon request.

Competing interest

The authors declare that they have no competing interests.

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