

Factors Affecting Childhood Vaccination in a Selected Barangay of Agusan Del Norte, Caraga Region: Basis for Program Enhancement

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ABSTRACT

Childhood vaccination remains essential for preventing serious diseases, yet incomplete immunization persists in many rural communities. This study examined demographic, behavioral, financial, decision-making, cultural, and religious factors affecting childhood vaccination in Barangay Maningalao, Las Nieves, Agusan del Norte, a rural locality. The study used a quantitative descriptive-correlational cross-sectional design. Total enumeration included 110 mothers of children aged zero to five years. Data were gathered through a validated researcher-made questionnaire and analyzed using frequency, percentage, mean, standard deviation, chi-square, and logistic regression. Most respondents were aged 25–34, married, low-income, and high school graduates. Fully vaccinated children comprised 79.1%, while 20.9% were partially vaccinated. Geographic location and socio-economic status were related to predetermined factors, while educational background was related to vaccination status. No predetermined factor independently predicted vaccination status overall within the community. The community demonstrated favorable perceptions, attitudes, and vaccination-related behaviors, with no unvaccinated children identified. However, partial vaccination remained evident. Geographic, economic, and educational differences influenced implementation and vaccination outcomes, while the combined predetermined factors did not independently explain childhood vaccination status after adjustment in the final multivariate logistic regression analysis. The study recommends intensified follow-up for partially vaccinated children, purok-based outreach, flexible vaccination schedules, simplified educational materials, and targeted support for low-income households. Barangay health workers should strengthen reminders, vaccination-card monitoring, catch-up sessions, and household visits. Future studies should further examine additional service-related and healthcare-system factors influencing vaccination completion locally.

Keywords: *Childhood vaccination, vaccination status, mothers, predetermined factors, program implementation, rural community, strategic action plan*

INTRODUCTION

Childhood vaccination remains one of the most effective public health interventions in preventing infectious diseases and reducing child mortality. While previous studies have explored vaccination coverage and general barriers to immunization, there remains a limited understanding of how maternal demographic characteristics, level of understanding, and program implementation factors interact in rural settings such as Agusan del Norte. The primary objective of this study is to examine the factors affecting childhood vaccination among mothers in a selected municipality in Agusan del Norte.

Statement of the Problem

This study aimed to determine the factors affecting childhood vaccination in a selected barangay in Agusan del Norte, Caraga Region, as a basis for developing a program enhancement plan.

Scope and Delimitations

This study covers 110 mothers of children aged zero to five in Barangay Maningalao. It is limited to one barangay, self-reported responses, and data gathered at one point in time.

Review of Related Literature

Childhood vaccination is shaped by knowledge, attitudes, socioeconomic conditions, access, and household influence. Trust and support improve uptake, while misinformation, poverty, and service barriers contribute to incomplete immunization (Dizon, 2025; Lagrada et al., 2023; Guye et al., 2023; Corpuz, 2024).

Theoretical Framework

Health Promotion Model was developed by Nola J. Pender in 1982. In relation to the present study, the Health Promotion Model supports the examination of the demographic profile of mothers, such as age, civil status, socio-economic status, geographic location, number of children, and educational background, as factors that may influence childhood vaccination.

Self-Care Deficit Nursing Theory was developed by Dorothea Orem in 1959. This theory emphasizes that individuals have the capacity and responsibility to care for themselves and their dependents, and that nursing becomes necessary when individuals are unable to meet these self-care needs. In connection with this study, Orem's theory is relevant because mothers and caregivers are primarily responsible for ensuring that their children receive appropriate health services, including childhood vaccination.

METHODOLOGY

A quantitative descriptive-correlational cross-sectional research method was used to examine the factors affecting childhood vaccination and determine their relationship with children's vaccination status among mothers in Barangay Maningalao, Las Nieves, Agusan del Norte.

Research Design

This study will utilize a descriptive-correlational research design. This design is a type of quantitative research that aims to describe existing conditions and examine the relationships among variables without manipulating them.

Research Steps

The researcher systematically secured approvals, validated the questionnaire, coordinated with local health personnel, recruited eligible mothers, administered surveys, encoded responses, analyzed data, and interpreted findings.

Data Collection and Sample Selection

Total enumeration included 110 eligible mothers, while questionnaires and vaccination records were used to collect demographic, behavioral, and immunization data.

Data Analysis Methods

Frequency, percentage, mean, and standard deviation summarized respondents' characteristics and ratings, while chi-square tests and logistic regression examined significant relationships and predictors of children's vaccination status within the local community.

Research Hypothesis and Validation

Null hypotheses were tested at 0.05 significance, while expert review, pilot testing, and Cronbach's alpha established instrument validity and reliability.

Study Limitations and Ethical Considerations

The study was limited to one barangay and self-reported data; informed consent, confidentiality, voluntary participation, and secure handling were maintained.

RESULTS AND DISCUSSION

Question 1. What is the demographic profile of mothers in the selected municipality?

The findings revealed that most respondents were 25–34 years old, married, and members of low-income households earning below ₱10,000 monthly. Most had one to two children and were high school graduates. Respondents were distributed across the eight puroks, with Puroks 4 and 5 having the highest representation.

Question 2. What is the vaccination status of children in the selected barangay?

The findings showed that 79.1 percent of the children were fully vaccinated, while 20.9 percent were partially vaccinated. No unvaccinated child was identified. Although vaccination acceptance was generally high, the presence of partially vaccinated children indicated persistent concerns involving missed doses, delayed schedules, and incomplete immunization.

Question 3. How do predetermined factors affect the implementation of the vaccination program in the community?

The findings revealed that respondents strongly agreed regarding their perception toward childhood vaccination, attitude toward vaccination participation, and vaccination-related behavior. Financial factors were rated neutral, indicating that economic barriers affected families differently. Decision-making and cultural and religious factors were rated disagree, suggesting limited perceived influence on vaccination participation.

Question 4. Is there a significant relationship between the demographic profile and the predetermined factors affecting vaccination-program implementation?

The findings showed that geographic location and socio-economic status were significantly related to the predetermined factors affecting vaccination-program implementation. Respondents from Puroks 1 and 7 and those from low-income households were more affected. Age, civil status, number of children, and educational background were not significantly associated with the predetermined factors.

Question 5. Is there a significant relationship between the demographic profile of mothers and the vaccination status of their children?

The findings revealed that educational background was significantly related to children's vaccination status. Mothers who were elementary graduates were more likely to have partially vaccinated children. Age, civil status, geographic location, number of children, and socio-economic status were not significantly related to the vaccination status of children.

Question 6. *Is there a significant relationship between the predetermined factors and the vaccination status of children in the community?*

The findings showed that decision-making factors and cultural and religious factors had significant crude associations with vaccination status. Perception toward childhood vaccination, attitude toward vaccination participation, vaccination-related behavior, and financial factors were not significantly associated with children's vaccination status in the unadjusted analysis.

Question 7. *Which predetermined factors significantly predict the vaccination status of children in the community?*

The findings revealed that none of the six predetermined factors significantly predicted children's vaccination status after all factors were included simultaneously in the multivariate logistic regression model. This indicated that vaccination status was influenced by interacting demographic, social, behavioral, economic, cultural, and program-related conditions rather than one independent factor.

Question 8. *Based on the findings, what Strategic Action Plan can be developed to enhance the implementation of the community vaccination program?*

The findings support the development of an integrated Strategic Action Plan focused on partially vaccinated children, low-income households, caregivers with limited educational attainment, and geographically vulnerable puroks. Proposed strategies include household profiling, vaccination reminders, catch-up sessions, mobile services, simplified health education, defaulter tracing, vaccination-card monitoring, and continuous program evaluation.

SUMMARY

The findings showed that most mothers were young to middle-aged, married, low-income, and high school graduates. Most children were fully vaccinated, although partial vaccination remained evident. Respondents demonstrated favorable perceptions, attitudes, and vaccination behaviors. Geographic location, socio-economic status, and educational background showed significant relationships with selected outcomes, while no predetermined factor independently predicted vaccination status.

CONCLUSIONS

- Educational background was significantly related to children's vaccination status, with elementary graduates more likely to have partially vaccinated children.
- Decision-making and cultural and religious factors showed significant crude relationships with vaccination status. However, these relationships became non-significant after the six predetermined factors were analyzed simultaneously.
- None of the predetermined factors independently predicted vaccination status in the multivariate logistic regression model, indicating that vaccination outcomes may result from interacting demographic, behavioral, economic, social, and program-related conditions.

RECOMMENDATIONS

Based on the findings and conclusions of the study, the following recommendations are suggested:

- The barangay health center should maintain an updated master list of fully vaccinated, partially vaccinated, and eligible children to support continuous monitoring and timely vaccination completion.
- Barangay health workers should conduct regular household visits, defaulter tracing, telephone reminders, and text-message notifications for children who miss scheduled vaccine doses.
- Mobile and purok-based vaccination activities should be intensified in Puroks 1 and 7 and other geographically underserved areas to reduce transportation and accessibility barriers.

ACKNOWLEDGMENTS

The researcher gratefully acknowledges God, advisers, local authorities, participants, faculty, staff, and all contributors and supporters.

AI DECLARATION STATEMENT

AI-supported tools helped with grammar and structure in creating this article. No AI tools were used to collect, analyze, or interpret data; all authors are credited for their academic contributions.

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