

Bakuna Eskwela School-Based Immunization Program: Its Implementation and Challenges

Lyn L. Caseñas

Student
Medina College
Philippines.

Abstract:

The Bakuna Eskwela School-Based Immunization Program aims to increase vaccination coverage among schoolchildren by delivering immunization services within schools, addressing barriers such as limited access to health facilities and low vaccination rates. This study assessed the program's implementation level and the challenges encountered by 94 key implementers in Pagadian City, using a descriptive-correlational design with a researcher-made questionnaire. Data were analyzed using mean, standard deviation, and Spearman's rho. Findings revealed a high overall level of implementation (mean = 3.676), with program design and strategy rated highest, followed by monitoring and evaluation, stakeholder engagement, and capacity building. Challenges encountered were generally low (mean = 2.372), with social and behavioral factors being the most notable. Structural, human resource, and policy/governance challenges were rated low. Statistical analysis showed no significant relationship between the level of implementation and the challenges encountered (Spearman's rho = 0.014, $p = 0.894$), indicating that the challenges did not significantly affect program effectiveness. In conclusion, the Bakuna Eskwela program was effectively implemented despite moderate social and behavioral challenges, while other challenges posed minimal disruption. The absence of a significant relationship between challenges and implementation suggests resilience in program execution. These insights can guide stakeholders to enhance support, address social barriers, and improve coordination to sustain and strengthen school-based immunization efforts.

Keywords: School-based immunization, program implementation, challenges encountered, vaccination coverage, public health program.

INTRODUCTION

The Bakuna Eskwela School-Based Immunization Program is a crucial health initiative aimed at increasing vaccination coverage among schoolchildren by bringing immunization services directly to educational institutions. This program addresses the need to protect students from vaccine-preventable diseases, especially in areas where access to health facilities is limited or where vaccination rates are low. Implementing such a program within schools presents unique opportunities but also challenges, such as coordinating between health and education sectors, ensuring proper vaccine storage and handling, managing parental consent, and addressing vaccine hesitancy or misinformation. Understanding both the implementation process and the obstacles faced is essential to improve the program's effectiveness, ensure student safety, and ultimately enhance public health outcomes in the community.

The Bakuna Eskwela School-Based Immunization Program (SBIP) is a government initiative aimed at protecting school-aged children from vaccine-preventable diseases through systematic immunization efforts. Republic Act No. 10152 mandates the provision of basic immunization services for infants and children, reinforcing the importance of vaccination in safeguarding public health (RA 10152, 2011). In support of this, the Department of Education (DepEd) collaborates with the Department of Health (DOH) to implement school-based immunization programs, as outlined in DepEd Memorandum No. 128, s. 2016, which highlights the role of schools in ensuring children receive essential vaccines (DepEd, 2016). Additionally, DepEd Order No. 007, s. 2024, reaffirms the government's commitment to strengthening school health initiatives,

recognizing the direct impact of student well-being on academic performance and overall development (DepEd, 2024). These policies establish a comprehensive framework for integrating immunization services within the school system, promoting accessibility and equitable health interventions for students.

Despite the recognized importance of immunization in safeguarding children's health, there remains a contextual gap in understanding how school-based immunization programs like Bakuna Eskwela are effectively implemented in different local settings. While national health policies promote vaccination, the practical challenges encountered at the school level—such as logistical constraints, coordination difficulties, and community acceptance—are often underexplored or poorly documented. This gap limits the ability to tailor interventions that address specific local barriers and optimize program delivery. Moreover, variations in resources, awareness, and attitudes among schools, parents, and health workers create diverse implementation experiences that need to be studied in context to identify best practices and develop more responsive health strategies for schoolchildren.

This study aims to comprehensively assess the implementation of the Bakuna Eskwela School-Based Immunization Program by examining key aspects such as program design and strategy, stakeholder engagement, capacity building, and monitoring and evaluation within selected schools. It also seeks to identify and analyze the various challenges faced during implementation, including structural issues, human resource limitations, social and behavioral factors, and policy or governance constraints. By exploring the relationship between the program's implementation level and these encountered challenges, the study intends to provide evidence-based insights that will guide the development of an effective intervention plan. Ultimately, this research strives to contribute to improving the efficiency and impact of school-based immunization efforts to better protect the health of students.

METHODS

Research Design

This study employed a descriptive-correlational research design to assess the implementation level of the Bakuna Eskwela School-Based Immunization Program and the challenges encountered during its execution. According to Creswell and Creswell (2018), this design is effective for describing current conditions and examining relationships between variables without manipulation. It provided a systematic approach to exploring the association between implementation components and the challenges faced, thereby offering valuable insights into real-world program dynamics.

Research Setting

This study was conducted in Pagadian City, Zamboanga Peninsula, a culturally diverse regional center inhabited by indigenous Lumads, Muslims, and Christians. Historically a key trade and governance hub, the city has grown into the capital of Zamboanga del Sur and the regional center for the peninsula. Its population's varied cultural beliefs influence health practices, posing challenges to programs like the Bakuna Eskwela School-Based Immunization Program

Research Respondents

The study involved 94 key implementers of the Bakuna Eskwela School-Based Immunization Program in Pagadian City, selected through purposive sampling based on their direct roles in planning, execution, and monitoring. Respondents included nurses, midwives, CHO and RHU personnel, and school health coordinators from both public and private schools. To be included in the study, participants had to be actively involved in the program during the study period and provide informed consent. The list of qualified respondents was obtained from the City Health Office and participating schools.

Research Instrument

The research instrument used in this study was a structured, researcher-made questionnaire consisting of two parts, each designed to collect data on the implementation and challenges of the Bakuna Eskwela School-Based Immunization Program. Part I assessed the level of implementation across four key areas: Program Design and Strategy, Stakeholder Engagement, Capacity Building, and Monitoring and Evaluation, using a

five-point Likert scale. Part II focused on the challenges encountered by implementers, also rated on the same scale, and categorized into Structural, Human Resource, Social and Behavioral, and Policy and Governance challenges. This instrument provided a clear and systematic way to evaluate both the

Instrument Validity

The research instrument was validated through a systematic process to ensure its accuracy and relevance. It was developed based on a thorough literature review and existing frameworks, then reviewed by a panel of experts including public health professionals and school health coordinators who refined its clarity and comprehensiveness. A pilot test with respondents similar to the study sample further assessed clarity and usability, leading to additional revisions. Reliability was confirmed through Cronbach's alpha tests, which showed strong internal consistency across sections. This combined process of expert review, pilot testing, and reliability analysis ensured the instrument was both valid and reliable for collecting meaningful data on program implementation and challenges.

Data-Gathering Procedure

The data collection followed a systematic and ethical process, beginning with formal permission requests to the Department of Health, Department of Education, and school administrators. After approval, coordination meetings were held to explain the study objectives and ethical considerations such as confidentiality and voluntary participation. A pilot test of the researcher-made questionnaire was conducted to ensure clarity and reliability, followed by revisions. The final questionnaire was then personally administered to health workers, school nurses, and teachers involved in the program, with an online option provided when requested. Respondents were given ample time to complete the survey, and follow-ups ensured a high response rate. Data were checked for completeness and accuracy before analysis, with strict adherence to confidentiality and voluntary participation throughout, ensuring reliable and valid data reflective of the program's challenges and effectiveness.

Ethical Considerations

This study strictly followed ethical guidelines in line with the American Psychological Association (APA, 2020). Informed consent was obtained from all participants, who were fully informed about the study's purpose, procedures, risks, and benefits. They were assured of their voluntary participation and the right to withdraw at any time without consequences. Confidentiality and anonymity were maintained by coding data to exclude personal identifiers, protecting participant privacy. Efforts were made to minimize any psychological, emotional, or professional harm, with support available if needed. The dignity and autonomy of participants were respected throughout the study. Approval was secured from the Institutional Review Board at Pagadian City Medical Center to ensure compliance with ethical standards. By adhering to these principles, the study aimed to gather meaningful data while safeguarding the rights and well-being of all involved.

Data Analysis

Data were analyzed using arithmetic mean and standard deviation to determine the average level of implementation and the variation in respondents' perceptions. The mean summarized overall program effectiveness across key areas such as program design, stakeholder engagement, capacity building, and monitoring and evaluation, while the standard deviation indicated the consistency of responses. To examine the relationship between program implementation and encountered challenges, Spearman's rho was used. This correlation coefficient is appropriate for the ordinal data collected via Likert scales and measures the strength and direction of association between ranked variables. The analysis provided insights into how different challenges, including structural, human resource, social, behavioral, and policy factors, relate to the program's implementation effectiveness.

RESULTS AND DISCUSSION

Table 1 - Level of Implementation of the Bakuna Eskwela School-Based Immunization Program in Terms of Program Design and Strategy

Indicators	Sd	Mean
------------	----	------

1. The program design is well-structured and easy to understand.	0.61	4.319
2. The immunization strategies used are appropriate for the target school population.	0.67	4.021
3. The program design aligns with national health standards.	0.75	3.830
4. The program's communication materials (e.g., posters, flyers) are clear and informative.	0.76	3.872
5. The immunization schedules are planned efficiently to avoid disruptions in school activities.	0.63	3.957
Average Mean	4.000 (High)	

Scale: 1.0 – 1.80 “Very Low”, 1.81 – 2.60 “Low”, 2.61 – 3.40 “Average”, 3.41 – 4.20 “High”
4.21– 5.00 “Very High”

Table 1.1 presents the level of implementation of the Bakuna Eskwela School-Based Immunization Program in terms of program design and strategy. The average mean score of 4.000 indicates a high level of implementation according to the given scale. This suggests that, overall, the program was effectively designed and strategically implemented, reflecting a positive reception and functional execution in the target schools. The high rating implies that stakeholders generally perceived the program as well-structured and operationally sound, which could contribute to smoother immunization processes and greater acceptance among the school community.

Looking closely at the individual indicators, the highest mean score of 4.319 was for the statement that the program design was well-structured and easy to understand, indicating strong clarity and organization in the program's framework. The immunization strategies being appropriate for the target school population received a mean of 4.021, suggesting that the approaches used were suitable and effectively tailored to the students' needs. The alignment of the program design with national health standards scored 3.830, showing a generally good compliance with regulatory requirements, though with some room for improvement. Communication materials scored 3.872, which reflects that information dissemination was clear but might benefit from enhancements to increase comprehension or engagement. Lastly, the immunization schedules were rated at 3.957, suggesting that the timing was well-planned to minimize disruptions but could be further optimized. Together, these indicators imply that the program was carefully designed and implemented, though certain areas like communication and scheduling could be refined for even better outcomes.

The findings of this study, which showed a high level of implementation in terms of program design and strategy, align with existing literature that underscores the effectiveness of well-structured school-based immunization programs. The high ratings for program structure, strategy suitability, national alignment, and communication clarity support claims that school-based approaches can significantly boost vaccine uptake when thoughtfully integrated into the educational environment (Adedzi & Dubé, 2021). Additionally, the emphasis on proper planning, efficient scheduling, and adherence to national standards reflects global strategic priorities for immunization success (Lindstrand et al., 2021), reinforcing the notion that local execution, when guided by clear frameworks, can effectively address common operational and engagement challenges.

Table 1.2- Level of Implementation of the Bakuna Eskwela School-Based Immunization Program in terms of Stakeholder Engagement

Indicators	Sd	Mean
1. Stakeholders (e.g., parents, local health officials) are well-informed about the program.	0.79	3.074
2. The local community is actively involved in the planning and execution of the program.	0.81	3.447
3. The school staff demonstrates strong support for the immunization program.	0.81	3.745
4. The program fosters good collaboration between teachers, health workers, and parents.	0.66	4.160
5. Communication channels for feedback between stakeholders are open and effective.	0.87	3.319
Average Mean	3.549 (High)	

Scale: 1.0 – 1.80 “Very Low”, 1.81 – 2.60 “Low”, 2.61 – 3.40 “Average”, 3.41 – 4.20 “High”

4.22– 5.00 “Very High”

Table 1.2 shows the level of implementation of the Bakuna Eskwela School-Based Immunization Program in terms of stakeholder engagement. The average mean score of 3.549 indicates a high level of implementation based on the provided scale. This suggests that overall, stakeholder involvement in the program was effective and positively perceived. The high rating implies that the program successfully engaged key participants such as parents, school staff, and local health officials, which is critical for the smooth operation and acceptance of the immunization activities within the school communities.

Examining the individual indicators, the highest mean score of 4.160 was for the program fostering good collaboration between teachers, health workers, and parents, indicating a strong partnership among key stakeholders. The support demonstrated by the school staff received a mean of 3.745, reflecting their active endorsement and participation in the program. Community involvement in planning and execution scored 3.447, suggesting moderate to high engagement but indicating potential for further improvement. Stakeholders being well-informed about the program scored 3.074, which falls into the average range, highlighting a need to enhance information dissemination. Lastly, communication channels for feedback scored 3.319, also within the average range, showing that while feedback mechanisms were in place, they could be made more effective to ensure greater responsiveness. Collectively, these indicators imply that although stakeholder engagement was generally strong, there remain areas such as information sharing and communication that could be further strengthened to maximize collaboration and program success.

The findings of the current study, which revealed a high level of stakeholder engagement in the Bakuna Eskwela School-Based Immunization Program—particularly in fostering collaboration among teachers, health workers, and parents—align with conclusions that multi-stakeholder cooperation enhances engagement and understanding in vaccination initiatives (Schlopsna & Scheersoi, 2024). However, while communication and involvement were rated high in the study, some aspects such as informing parents and feedback mechanisms received lower mean scores, suggesting areas for improvement. This contrasts with findings that emphasize the importance of a structured immunization management information system to streamline communication and coordination among local health units and community stakeholders, thereby reducing gaps in awareness and participation (Catedrilla et al., 2025). Together, these studies underscore the critical role of inclusive planning and effective information flow in maximizing stakeholder participation in school-based immunization programs.

Table 1.3 - Level of Implementation of the Bakuna Eskwela School-Based Immunization Program in terms of Capacity Building

Indicators	Sd	Mean
1. Health personnel and school staff are well-trained to carry out the immunization program.	0.54	4.213
2. The program includes regular training and workshops for teachers and health workers.	0.94	3.117
3. Teachers and school staff are sufficiently equipped with materials for program implementation.	0.88	3.191
4. There is ongoing professional development related to immunization practices.	0.75	3.553
5. The program provides adequate resources for the smooth execution of immunization activities.	0.64	3.606
Average Mean		3.536 (High)

Scale: 1.0 – 1.80 “Very Low”, 1.81 – 2.60 “Low”, 2.61 – 3.40 “Average”, 3.41 – 4.20 “High”

4.23– 5.00 “Very High”

Table 1.3 presents the level of implementation of the Bakuna Eskwela School-Based Immunization Program in terms of capacity building. The average mean score of 3.536 indicates a high level of implementation according to the provided scale. This suggests that the program generally succeeded in strengthening the abilities and skills of health personnel and school staff to effectively carry out immunization activities. The

high rating implies that capacity-building efforts were perceived as sufficiently robust to support the program's goals, which is crucial for ensuring quality service delivery and sustainability.

Regarding the individual indicators, the highest mean score of 4.213 was for health personnel and school staff being well-trained to carry out the immunization program, reflecting strong confidence in the initial training provided. However, the inclusion of regular training and workshops for teachers and health workers scored lower at 3.117, indicating that ongoing formal training sessions may have been less consistent or insufficient. Similarly, the availability of materials for program implementation received a mean of 3.191, suggesting that while some resources were available, there might have been gaps in equipping staff fully. Ongoing professional development related to immunization practices scored 3.553, and the adequacy of resources for smooth execution scored 3.606, both indicating moderate to high support but also highlighting room for improvement. Overall, these indicators suggest that while initial training was strong, the program could benefit from more continuous capacity-building activities and better resource provision to maintain and enhance the skills and readiness of involved personnel.

The study's findings support the importance of building the capacity of school and health personnel in the effective implementation of school-based immunization programs. This aligns with the observations that the success of the Expanded Program on Immunization in the Philippines depends on sustained training and resource provision for implementers (Ulep & Uy, 2021). Similarly, countries under the Global Health Security Agenda face ongoing challenges in capacity building, particularly regarding professional development and emergency response readiness (Lee et al., 2024). Both studies underscore that while health and education workers play a critical role in immunization programs, continuous support and training are essential to ensure quality delivery and resilience in public health systems (Ulep & Uy, 2021; Lee et al., 2024).

Table 1.4 - Level of Implementation of the Bakuna Eskwela School-Based Immunization Program in terms of Monitoring and Evaluation

Indicators	Sd	Mean
1. There are clear indicators to assess the success of the program.	0.63	3.947
2. Regular monitoring of the program's progress is conducted.	0.69	3.543
3. Evaluation results are used to improve the program's implementation.	0.49	3.872
4. There is a mechanism for addressing issues identified during program monitoring.	0.74	3.309
5. Stakeholders are involved in the evaluation process of the immunization program.	0.64	3.426
Average Mean		3.619 (High)

Scale: 1.0 – 1.80 “Very Low”, 1.81 – 2.60 “Low”, 2.61 – 3.40 “Average”, 3.41 – 4.20 “High”
4.24– 5.00 “Very High”

Table 1.4 presents the level of implementation of the Bakuna Eskwela School-Based Immunization Program in terms of monitoring and evaluation. The average mean score of 3.619 indicates a high level of implementation based on the given scale. This suggests that the program had an effective system in place for tracking progress and assessing outcomes, which is essential for ensuring accountability and continuous improvement. The high rating implies that stakeholders generally viewed the monitoring and evaluation processes as adequately structured and functional.

Looking at the individual indicators, the presence of clear indicators to assess the success of the program scored the highest with a mean of 3.947, showing that criteria for evaluating program effectiveness were well established. Regular monitoring of the program's progress received a mean of 3.543, indicating consistent efforts to track implementation but with potential for increased frequency or rigor. The use of evaluation results to improve program implementation scored 3.872, reflecting a strong commitment to applying feedback for program enhancement. However, the mechanism for addressing issues identified during monitoring scored lower at 3.309, suggesting that problem-solving processes might not have been fully effective or timely. Lastly, stakeholder involvement in the evaluation process scored 3.426, indicating moderate engagement that could be further strengthened to foster greater collaboration and shared accountability. Together, these indicators highlight a generally strong monitoring and evaluation framework,

with some areas, particularly issue resolution and stakeholder participation, that could benefit from further development.

The findings on monitoring and evaluation of the Bakuna Eskwela School-Based Immunization Program reveal a strong emphasis on clear success indicators, regular progress monitoring, utilization of evaluation results for program improvement, and stakeholder involvement, which aligns with the broader public health literature emphasizing the importance of structured frameworks and well-defined indicators in vaccination program assessment. Marzouk et al. (2022) highlight that effective monitoring and evaluation frameworks are crucial for identifying implementation gaps, facilitating continuous improvement, and ensuring accountability in immunization efforts. Both the study findings and the literature underscore that transparent evaluation mechanisms and inclusive stakeholder participation enhance the responsiveness and effectiveness of immunization programs, ultimately contributing to improved vaccination outcomes and public health impact.

Table 1.5 - Summary of the Level of Effectiveness of the BakunaEskwela School-Based Immunization Program as Perceived by the Implementers

Indicators	Sd	Mean
Program Design and Strategy	0.68	4.000
Stakeholder Engagement	0.79	3.549
Capacity Building	0.75	3.536
Monitoring and Evaluation	0.64	3.619
Average Mean	3.676 (High)	

Scale: 1.0 – 1.80 “Very Low”, 1.81 – 2.60 “Low”, 2.61 – 3.40 “Average”, 3.41 – 4.20 “High”
4.25– 5.00 “Very High”

Table 1.5 summarizes the overall level of effectiveness of the Bakuna Eskwela School-Based Immunization Program as perceived by the implementers. The average mean score of 3.676 indicates a high level of effectiveness according to the given scale. This suggests that, from the perspective of those directly involved in the program’s execution, the immunization initiative was generally successful in meeting its objectives. The high rating implies that the program components worked well together to facilitate smooth implementation and positive outcomes.

Among all implementation aspects, program design and strategy emerged as the strongest area with the highest mean score of 4.000, indicating strong confidence in the clarity and appropriateness of the program framework. Monitoring and evaluation followed with a mean of 3.619, reflecting effective tracking and assessment processes. Stakeholder engagement scored 3.549, showing good involvement and collaboration among key participants, though with some scope for improvement. Capacity building received the lowest score at 3.536, suggesting that while training and resources were generally adequate, there were areas that could benefit from further strengthening. Overall, these findings imply that the program was well-designed and effectively monitored, with solid stakeholder support and capacity development, yet continuous enhancement in training and engagement could further improve its effectiveness.

The overall high level of effectiveness of the Bakuna Eskwela School-Based Immunization Program aligns with findings that emphasize the critical role of well-designed vaccination programs coupled with strong public cooperation to prevent disease outbreaks, such as measles, in the Philippines (Cordero, 2024). Similarly, the importance of timely and coordinated vaccination efforts is highlighted in studies that document the challenges and successes in childhood immunization schedules across the country, underscoring that effective stakeholder engagement and program management are key to improving vaccination coverage and health outcomes (Raguindin et al., 2021). Both studies support the notion that comprehensive strategies encompassing program design, stakeholder involvement, capacity building, and ongoing monitoring are essential to achieving sustained immunization success and public health protection.

Table 2.1 - Challenges Encountered in the Implementation of the program in terms of Structural Challenges

Indicators	Sd	Mean
------------	----	------

1. The physical infrastructure (e.g., vaccination sites) in schools is inadequate for the program.	0.87	2.074
2. The program faces logistical challenges in storing and handling vaccines.	0.72	2.213
3. There is insufficient funding allocated for the program's implementation.	0.92	2.340
4. Transportation of vaccines to remote schools is often delayed.	0.81	2.202
5. There are challenges in coordinating immunization schedules with the school calendar.	0.69	2.160
Average Mean	2.198 (Low)	

Scale: 1.0 – 1.80 “Very Low”, 1.81 – 2.60 “Low”, 2.61 – 3.40 “Average”, 3.41 – 4.20 “High”
4.26– 5.00 “Very High”

Table 2.1 presents the challenges encountered in the implementation of the Bakuna Eskwela School-Based Immunization Program in terms of structural challenges. The average mean score of 2.198 indicates a low level of structural challenges based on the provided scale. This suggests that, overall, structural issues were perceived as relatively minimal or not severely hindering the implementation of the program. The low rating implies that while some obstacles existed, the program was not significantly constrained by infrastructure, funding, or logistical shortcomings from the perspective of the implementers.

Looking at the individual indicators, the challenge related to insufficient funding for the program’s implementation scored the highest mean of 2.340, indicating it was the most notable structural challenge but still rated as low. Logistical challenges in storing and handling vaccines followed closely with a mean of 2.213, suggesting some difficulties in managing vaccine storage but not severe enough to majorly disrupt the program. Transportation delays to remote schools and coordination with the school calendar scored 2.202 and 2.160 respectively, showing moderate concerns that may occasionally affect timely immunization activities. The inadequacy of physical infrastructure such as vaccination sites scored the lowest at 2.074, indicating that this issue was the least problematic among the structural challenges assessed. Collectively, these indicators suggest that while structural challenges were present, they were generally manageable and did not critically impede the program’s progress.

The findings of the study, which highlight the low-level implementation of the Bakuna Eskwela program due to structural challenges such as inadequate infrastructure, logistical difficulties, and limited funding, reflect similar issues found in broader literature. Structural barriers like storage, transport logistics, and insufficient budget were also emphasized in the Philippine context during the COVID-19 vaccine rollout, where brand hesitancy compounded logistical constraints and resource limitations (Amit et al., 2022). Similarly, the Ethiopian immunization program faced critical infrastructure and funding deficiencies, alongside coordination problems in reaching remote communities—obstacles that align with those identified in the school-based program (Nigatu et al., 2024). These commonalities underline the global nature of structural barriers in vaccination efforts, particularly in resource-constrained settings.

Table 2.2 - Challenges Encountered in the Implementation of the program in terms of Human Resource Challenges

Indicators	Sd	Mean
1. There is a shortage of trained health workers to administer the vaccines.	0.71	2.011
2. Teachers lack sufficient time and resources to support the immunization activities.	0.81	2.468
3. There is high turnover of staff involved in the immunization program.	0.60	1.915
4. Health workers experience burnout due to the additional workload from the program.	0.73	2.043
5. The program faces difficulties in recruiting volunteers to assist with immunization activities.	0.88	3.000
Average Mean	2.287 (Low)	

Scale: 1.0 – 1.80 “Very Low”, 1.81 – 2.60 “Low”, 2.61 – 3.40 “Average”, 3.41 – 4.20 “High”
4.27– 5.00 “Very High”

Table 2.2 presents the challenges encountered in the implementation of the Bakuna Eskwela School-Based Immunization Program in terms of human resource challenges. The average mean score of 2.287 indicates a low level of human resource challenges based on the provided scale. This suggests that, overall, issues related to personnel such as staffing, workload, and recruitment were perceived as relatively minor obstacles in the program's implementation. The low rating implies that while some difficulties existed, these challenges were not significantly detrimental to the program's overall functioning.

Regarding the individual indicators, the difficulty in recruiting volunteers to assist with immunization activities scored the highest mean of 3.000, indicating an average level of challenge and highlighting this as a more notable concern compared to others. Teachers' lack of sufficient time and resources to support immunization activities scored 2.468, showing it was also a significant but still low-level challenge. Shortage of trained health workers and health worker burnout due to additional workload scored 2.011 and 2.043 respectively, reflecting some issues but at a low intensity. The high turnover of staff involved in the program received the lowest score of 1.915, suggesting that staff retention was the least problematic among the human resource challenges identified. Overall, these indicators reveal that human resource challenges existed but were generally manageable and did not critically hinder the implementation of the program.

The findings on human resource challenges in the implementation of the Bakuna Eskwela program reflect common issues seen globally in vaccination initiatives, particularly in low- and middle-income countries. The success of vaccination programs heavily relies on the availability of adequately trained personnel and proper governance structures to manage those (Piraveenan et al., 2021). Staffing shortages, high turnover, and lack of support infrastructure can hinder efficient vaccine delivery. Similarly, insufficient training, staff burnout, and limited volunteer support have been identified as substantial barriers, especially in under-resourced settings (Ebrahimi et al., 2023). Both studies reinforce the importance of addressing human resource constraints through capacity building and policy-level reforms to ensure the sustainability and effectiveness of immunization efforts.

Table 2.3 - Challenges Encountered in the Implementation of the program in terms of Social and Behavioral Factors

Indicators	Sd	Mean
1. Parents or guardians are hesitant to allow their children to participate in the program.	0.96	2.574
2. Some students have fears or misconceptions about vaccinations that hinder participation.	0.97	2.968
3. The community does not fully understand the benefits of immunization.	1.02	2.947
4. Cultural beliefs and practices impact the willingness of families to participate in the program.	0.99	3.021
5. The program experiences resistance from some community leaders.	0.91	2.489
Average Mean	2.800 (Average)	

Scale: 1.0 – 1.80 “Very Low”, 1.81 – 2.60 “Low”, 2.61 – 3.40 “Average”, 3.41 – 4.20 “High”
4.28– 5.00 “Very High”

Table 2.3 presents the challenges encountered in the implementation of the Bakuna Eskwela School-Based Immunization Program in terms of social and behavioral factors. The average mean score of 2.800 indicates an average level of challenges in this category based on the given scale. This suggests that social and behavioral issues were moderately impactful on the program's implementation. The average rating implies that these factors posed notable obstacles that required attention to improve participation and program acceptance within the school communities.

Examining the individual indicators, cultural beliefs and practices impacting family willingness to participate scored the highest mean of 3.021, highlighting it as the most significant social-behavioral challenge. Similarly, misconceptions among students about vaccinations (mean = 2.968) and community lack of full understanding of immunization benefits (mean = 2.947) were also prominent concerns. Parents' or guardians' hesitancy to

allow their children to participate (mean = 2.574) and resistance from some community leaders (mean = 2.489) showed slightly lower but still relevant challenges. These results indicate that while structural and human resource issues were less problematic, social and behavioral factors—particularly cultural beliefs and misinformation—played a critical role in influencing the success of the immunization program. Addressing these challenges through education and community engagement would be essential to enhance program effectiveness.

The study's findings on social and behavioral challenges such as parental hesitancy, misconceptions about vaccines, and cultural influences align with literature emphasizing the significant role of community beliefs and understanding in shaping immunization uptake. A qualitative investigation in Northwest Ethiopia highlighted that lack of awareness, cultural resistance, and limited engagement of community leaders negatively affected immunization demand, underscoring the importance of tailored social and behavioral change communication strategies (Bayih et al., 2021). Similarly, barriers such as fear, misinformation, and low perceived benefit of vaccines were found to hinder routine childhood immunization, emphasizing the need for context-specific interventions that enhance trust and awareness within communities (Parsekar et al., 2024).

Table 2.4 - Challenges Encountered in the Implementation of the program in terms of Policy and Governance Challenges

Indicators	Sd	Mean
1. The program faces delays in policy approvals from local government units.	0.74	2.245
2. There is a lack of clear policies on how schools should implement the immunization program.	0.62	2.064
3. National policies related to school-based immunization are not consistently enforced.	1.23	2.191
4. Budget allocation for immunization programs is often insufficient or delayed.	0.88	2.479
5. The program's governance structure is unclear, leading to confusion during implementation.	0.67	2.043
Average Mean	2.204 (Low)	

Scale: 1.0 – 1.80 “Very Low”, 1.81 – 2.60 “Low”, 2.61 – 3.40 “Average”, 3.41 – 4.20 “High”
4.29– 5.00 “Very High”

Table 2.4 presented the challenges encountered in the implementation of the Bakuna Eskwela School-Based Immunization Program in terms of policy and governance. The average mean was 2.204, which fell within the “Low” category. This indicated that policy and governance-related challenges were present but not overwhelmingly severe. However, the low average suggested that inconsistencies in policy guidance and administrative support may have hindered the smooth execution of the program, potentially impacting coordination and efficiency at various implementation levels.

In terms of specific indicators, the highest mean was observed for “Budget allocation for immunization programs is often insufficient or delayed” at 2.479, signaling a moderate concern with financial resource management. Delays in policy approvals from local government units (mean = 2.245) and inconsistent enforcement of national policies (mean = 2.191) were also noted challenges. Meanwhile, lack of clear school implementation policies (mean = 2.064) and unclear governance structure (mean = 2.043) emerged as particularly weak points. These findings implied that to strengthen the program, more robust and clearly defined governance mechanisms, timely budget disbursement, and stronger policy enforcement must be prioritized.

The findings from the study, which indicate low levels of program effectiveness due to policy and governance-related challenges, align with observations from previous literature. School staff are often underutilized in the governance of immunization programs, contributing to implementation gaps and missed public health opportunities (Navin et al., 2021). Similarly, persistent supply-side constraints within the Philippine Expanded

Program on Immunization, including inadequate policy clarity, delayed funding, and inconsistent local enforcement, mirror the governance and policy issues found in the present study (Ulep & Uy, 2022).

Table 2.5 - Summary of the Challenges Encountered in the Implementation of the Program

Indicators	Sd	Mean
Structural Challenges	0.80	2.198
Human Resource Challenges	0.75	2.287
Social and Behavioral Factors	0.97	2.800
Policy and Governance Challenges	0.83	2.204
Average Mean	2.372 (Low)	

Scale: 1.0 – 1.80 “Very Low”, 1.81 – 2.60 “Low”, 2.61 – 3.40 “Average”, 3.41 – 4.20 “High”
4.30– 5.00 “Very High”

Table 2.5 presented the summary of challenges encountered in the implementation of the Bakuna Eskwela School-Based Immunization Program. The overall average mean was 2.372, which fell under the “Low” category. This implied that while challenges were present in the implementation process, they were not critically severe. However, the low average still indicated notable barriers that could affect the program’s efficiency, outreach, and sustainability if not addressed proactively.

Among the indicators, Social and Behavioral Factors had the highest mean at 2.800, placing it within the “Average” level and suggesting it was the most prominent area of concern. This reflected the significant role of community beliefs, parental consent, and student attitudes in influencing program participation. On the other hand, Structural Challenges (mean = 2.198), Policy and Governance Challenges (mean = 2.204), and Human Resource Challenges (mean = 2.287) were all rated “Low,” indicating that issues like infrastructure, policy clarity, staffing, and logistical support were present but less emphasized compared to social dynamics. These findings emphasized the need for more targeted strategies in community engagement, clearer governance policies, and strengthened logistical and human resource support to enhance program delivery.

The study’s findings reveal that challenges in the implementation of the immunization program are predominantly low across structural, human resource, policy, and governance aspects, with social and behavioral factors presenting slightly higher difficulties. This aligns with existing literature emphasizing multifaceted barriers in routine immunization efforts in the Philippines, where structural issues like inadequate infrastructure and logistical hurdles coexist with human resource shortages and governance inefficiencies (Cordero, 2024). Additionally, social and behavioral challenges, such as parental hesitancy and misconceptions, significantly influence vaccination uptake, reflecting community-level complexities that impact program success (Casiño & Walag, 2022). Both studies highlight the interplay between systemic and community factors, underscoring the need for comprehensive strategies that address not only supply-side constraints but also sociocultural determinants to improve immunization coverage.

Table 3 - Test of Significant Relationship Between Level of Implementation of the Bakuna Skwela School-Based Immunization Program and the Challenges Encountered

Variables	Spearman’s rho	p-value	Decision
Level of Implementation and Challenges Encountered	0.014	0.894	retain the H_0

Note: If $p \leq 0.05$, with a significant difference

Table 3 presented the test of significant relationship between the level of implementation of the Bakuna Eskwela School-Based Immunization Program and the challenges encountered during its execution. The decision was to retain the null hypothesis (H_0), indicating that there was no significant relationship between the program’s level of implementation and the challenges faced. This implied that the perceived effectiveness of implementation was not strongly influenced by the identified challenges, or that implementers managed to carry out the program regardless of the difficulties encountered.

The Spearman's rho value was 0.014, indicating a very weak positive correlation between the two variables. Meanwhile, the p-value was 0.894, which was significantly higher than the 0.05 threshold for significance. This confirmed the lack of a statistically significant relationship, suggesting that other factors—such as institutional support, personal motivation, or external community dynamics—might have played a greater role in influencing implementation than the identified challenges alone.

The study's finding of no significant relationship between the level of implementation of the Bakuna Skwela School-Based Immunization Program and the challenges encountered aligns with observations in the broader literature. Despite numerous obstacles faced during routine immunization efforts in the Philippines, program implementation can continue effectively due to adaptive strategies and community engagement. Similarly, implementing school-based immunizations, such as the CARD™ approach, is feasible even in the presence of operational challenges, emphasizing that overcoming barriers does not necessarily correlate with measurable differences in implementation levels. Both studies underscore that while challenges exist, they do not always impede program execution significantly, reflecting a resilience in immunization initiatives (Shibata, 2022; Taddio et al., 2021).

CONCLUSIONS AND RECOMMENDATIONS

Conclusion

The findings revealed that the Bakuna Eskwela School-Based Immunization Program was implemented at a high level, particularly in terms of program design, monitoring, stakeholder engagement, and capacity building, indicating effective planning and execution by implementers. Despite this, various challenges were encountered, particularly social and behavioral factors, while structural, human resource, and governance issues were generally low in severity. Notably, the statistical analysis showed no significant relationship between the level of implementation and the challenges encountered, suggesting that the presence of such challenges did not substantially affect the successful execution of the program.

Recommendation

In light of the study's findings, it is recommended that sustained education efforts be provided to students and parents to address fears and misconceptions about immunization, which may lead to increased participation. Strengthening collaboration among school administrators, teachers, and health authorities, along with implementing training programs to support immunization advocacy, can enhance support within schools. Improving staff deployment, ensuring ongoing training, and promoting better coordination between health workers and schools are also important for more efficient program delivery. The Department of Education is encouraged to offer stronger policy support and build closer partnerships with the Department of Health and local government units to improve implementation and monitoring. At the same time, the Department of Health may benefit from reviewing existing policies to resolve inconsistencies, ensure timely funding, and adopt culturally sensitive approaches that foster trust and acceptance. Policymakers may use these insights to strengthen legislation supporting school-based health programs, while future researchers are encouraged to explore other areas and factors, such as long-term outcomes and stakeholder perspectives, to further enhance program effectiveness.

REFERENCES:

1. Adedzi, K. A., & Dubé, E. (2021). School-based immunization programs: An effective strategy for achieving high vaccination rates? *Vaccine: X*, 3, 100049. <https://doi.org/10.1016/j.jvacx.2021.100049>
2. American Psychological Association. (2020). *Publication manual of the American Psychological Association* (7th ed.). <https://apastyle.apa.org/products/publication-manual-7th-edition>
3. Amit, A. M. L., Pepito, V. C. F., Sumpaico-Tanchanco, L., & Dayrit, M. M. (2022). COVID-19 vaccine brand hesitancy and other challenges to vaccination in the Philippines. *PLOS Global Public Health*, 2(1), e0000165. <https://doi.org/10.1371/journal.pgph.0000165>
4. Bayih, G., Teklu, A., Mekonnen, Z. A., Tsedaw, T., Tefera, S., Feletto, M., & Tilahun, B. (2021). The implementation of social and behavior change communication intervention to improve immunization demand: A qualitative study in Awabel district, Northwest Ethiopia. *Ethiopian Journal of Health Development*, 35(3).

5. Casiño, J. J., & Walag, A. M. P. (2022). Issues and challenges of, factors that affect, and the primary influences of parents' decisions to vaccinate their adolescents: A case of a local national high school in Cagayan de Oro City, Philippines. *Canadian Journal of Family and Youth / Le Journal Canadien De Famille Et De La Jeunesse*, 14(1), 147–161. <https://doi.org/10.29173/cjfy29752>
6. Catedrilla, J. M., Castillon, R., Jr., Alonzo, Z. E., & Vesorio, G. B. (2025). Strengthening public child healthcare: Development of an immunization management information system for a local community in southern Mindanao, Philippines. *Journal of Health Research and Society*, 3(1), 68–79. <https://doi.org/10.34002/jhrs.v3i1.62>
7. Cordero, D. A. (2024). Routine immunization for children in the Philippines: Challenges and interventions. *Therapeutic Advances in Vaccines and Immunotherapy*, 12. <https://doi.org/10.1177/25151355241264528>
8. Cordero, D. A., Jr. (2024). Another measles outbreak in the Philippines? The essentiality of a successful vaccination program and public cooperation. *Human Vaccines & Immunotherapeutics*, 20(1). <https://doi.org/10.1080/21645515.2024.2312605>
9. Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). Sage Publications.
10. Department of Education (DepEd). (2016). DepEd Memorandum No. 128, s. 2016: School-Based Immunization Program for School Year 2016-2017. Retrieved from https://www.deped.gov.ph/wp-content/uploads/2018/10/DM_s2016_128.pdf
11. Department of Education (DepEd). (2024). DepEd Order No. 007, s. 2024: Implementing Guidelines on School Health and Nutrition Programs. Retrieved from https://www.deped.gov.ph/wp-content/uploads/DO_s2024_007.pdf
12. Ebrahimi, N., Yousefi, Z., Khosravi, G., Malayeri, F. E., Golabi, M., Askarzadeh, M., Shams, M. H., Ghezlbash, B., & Eskandari, N. (2023). Human papillomavirus vaccination in low- and middle-income countries: Progression, barriers, and future prospective. *Frontiers in Immunology*, 14, 1150238. <https://doi.org/10.3389/fimmu.2023.1150238>
13. Lee, S., Oh, J. J., Park, S. H., Ro, D., Jeong, Y. J., & Kim, S. Y. (2024). Challenges in capacity building of national immunization programs and emergency or pandemic vaccination responses in the Global Health Security Agenda member countries. *Osong Public Health and Research Perspectives*, 15(2), 182–185. <https://doi.org/10.24171/j.phrp.2023.0159>
14. Lindstrand, A., Cherian, T., Chang-Blanc, D., Feikin, D., & O'Brien, K. L. (2021). The world of immunization: Achievements, challenges, and strategic vision for the next decade. *The Journal of Infectious Diseases*, 224(Suppl 4), S452–S467. <https://doi.org/10.1093/infdis/jiab284>
15. Marzouk, M., Omar, M., Sirison, K., Ananthakrishnan, A., Durrance-Bagale, A., Pheerapanyawaranun, C., Porncharoen, C., Pimsarn, N., Lam, S. T., Ung, M., Aribou, Z. M., Dabak, S. V., Isaranuwatthai, W., & Howard, N. (2022). Monitoring and evaluation of national vaccination implementation: A scoping review of how frameworks and indicators are used in the public health literature. *Vaccines*, 10(4), 567. <https://doi.org/10.3390/vaccines10040567>
16. Navin, M. C., Kozak, A. T., & Attwell, K. (2021). School staff and immunization governance: Missed opportunities for public health promotion. *Vaccine*, 40(51), 7433–7439. <https://doi.org/10.1016/j.vaccine.2021.07.061>
17. Nigatu, T., Abraham, L., Willems, H., Tilaye, M., Tiruneh, F., Gebru, F., Tafesse, Z., Getachew, B., Bulcha, M., Tewfik, S., & Alemu, T. (2024). The status of immunization program and challenges in Ethiopia: A mixed method study. *SAGE Open Medicine*, 12, 1–10. <https://doi.org/10.1177/20503121241237115>
18. Parsekar, S. S., Vadrevu, L., Jain, M., Menon, S., & Taneja, G. (2024). Interventions addressing routine childhood immunization and its behavioral and social drivers. *Frontiers in Public Health*, 12, 1364798. <https://doi.org/10.3389/fpubh.2024.1364798>
19. Piraveenan, M., Sawleshwarkar, S., Walsh, M., Zablotska, I., Bhattacharyya, S., Farooqui, H. H., Bhatnagar, T., Karan, A., Murhekar, M., Zodpey, S., Rao, K. S. M., Pattison, P., Zomaya, A., & Perc, M. (2021). Optimal governance and implementation of vaccination programmes to contain the COVID-19 pandemic. *Royal Society Open Science*, 8(6), 210429. <https://doi.org/10.1098/rsos.210429>

20. Raguindin, P. F., Morales-Dizon, M., Aldaba, J., Mangulabnan, L. P., Reyes, R. P., Batmunkh, N., Ducusin, M. J., & Lopez, A. L. (2021). Timeliness of childhood vaccinations in the Philippines. *Journal of Public Health Policy*, 42(1), 53–70. <https://doi.org/10.1057/s41271-020-00255-w>
21. REPUBLIC ACT NO. 10152 - AN ACT PROVIDING FOR MANDATORY BASIC IMMUNIZATION SERVICES FOR INFANTS AND CHILDREN, REPEALING FOR THE PURPOSE PRESIDENTIAL DECREE NO. 996, AS AMENDED - Supreme Court E-Library. (2011). <https://elibrary.judiciary.gov.ph/thebookshelf/showdocs/2/37483>
22. Schlopsna, M., & Scheersoi, A. (2024). Understanding student engagement in vaccination education: An interview-based multi-stakeholder study. *Frontiers in Public Health*, 12, Article 1485498. <https://doi.org/10.3389/fpubh.2024.1485498>
23. Shibata, W. (2022). Childhood routine immunization in the Philippines.
24. Taddio, A., Coldham, J., Logeman, C., et al. (2021). Feasibility of implementation of CARD™ for school-based immunizations in Calgary, Alberta: A cluster trial. *BMC Public Health*, 21(1), 260. <https://doi.org/10.1186/s12889-021-10247-4>
25. Ulep, V. G. T., & Uy, J. (2022). An assessment of the Expanded Program on Immunization (EPI) in the Philippines: Supply-side challenges and ways forward. *Philippine Institute for Development Studies Research Papers*, 2022(4). <https://pidswebs.pids.gov.ph/CDN/PUBLICATIONS/pidsrp2204.pdf>
26. Ulep, V. G., & Uy, J. (2021). An assessment of the Expanded Program on Immunization (EPI) in the Philippines: Challenges and ways forward (No. 2021-04). *Philippine Institute for Development Studies*. <https://pidswebs.pids.gov.ph/CDN/PUBLICATIONS/pidsdps2104.pdf>