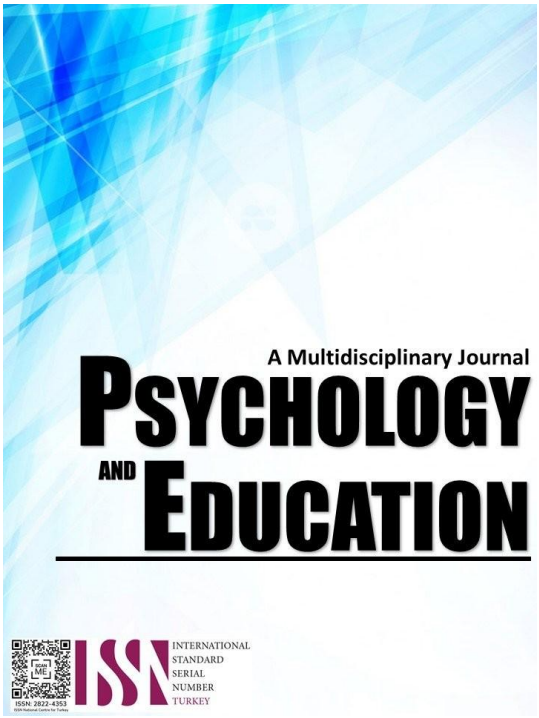
PREVENTIVE MEASURES AGAINST COMMUNICABLE DISEASES: A BASIS FOR THE ENHANCEMENT OF HEALTH PROGRAMS



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Research Article

Preventive Measures Against Communicable Diseases: A Basis for the Enhancement of Health Programs

Aljon Peter L. Temporal,* Helen Mercedes C. Asturias
For affiliations and correspondence, see the last page.

Abstract

The Philippines continues to face persistent challenges from communicable diseases, particularly coronavirus disease (COVID-19), tuberculosis (TB), and measles, which place tremendous strain on the primary healthcare system, where Barangay Health Workers (BHWs) act as frontline providers of health promotion, disease prevention, and community surveillance. This study examined the preventive health measure practices of BHWs in selected barangays of Cainta, Rizal, during 2023–2024, focusing on their implementation across the three diseases and the control mechanisms used in prevention, detection, and response. Employing a quantitative descriptive-comparative design, the research utilized a structured questionnaire validated by experts and pilot-tested for reliability (Cronbach's $\alpha \geq 0.80$), with 218 BHWs selected through proportionate simple random sampling from San Andres, San Juan, San Isidro, and Sto. Domingo. Data were analyzed using descriptive statistics, t-tests, ANOVA, and nonparametric alternatives, with a significance level set at $\alpha = 0.05$. The results indicated that preventive measures were practiced to varying degrees across barangays, with significant differences noted in their implementation for COVID-19, TB, and measles. Control mechanisms—including surveillance, laboratory testing, preparedness and response, evidence-based policies, and public health communication—also varied, while organizational and delivery factors such as governance, infrastructure, financing, and partnerships influenced effectiveness. The findings underscore the critical role of BHWs in grassroots-level disease prevention while revealing systemic gaps that hinder program sustainability. Strengthening training, institutional support, and intersectoral collaboration is essential to improve health program delivery and resilience. Overall, the study contributes evidence to guide policy development and community-based health interventions, reinforcing BHWs as the backbone of primary healthcare and a vital force in strengthening the Philippines' capacity to address current and future communicable disease threats.

Keywords: *barangay health workers, communicable diseases, COVID-19, tuberculosis, measles, preventive health measures, community-based health programs, public health communication, disease control mechanisms*

Introduction

The Philippines continues to face significant health challenges from communicable diseases, particularly coronavirus disease (COVID-19), tuberculosis (TB), and measles. Recent surveillance reports highlight that despite improvements in pandemic management, COVID-19 has left a lasting impact, with more than 4.1 million confirmed cases and over 66,000 deaths recorded since 2020 (Reuters, 2024). Tuberculosis remains one of the country's leading public health concerns, with the Philippines ranked among the highest globally in TB incidence, accounting for approximately 740,000 cases in 2022 (USAID & DOH, 2024; Punongbayan, 2024). Meanwhile, measles outbreaks have re-emerged in several regions, largely due to declining immunization coverage and pandemic-related disruptions (UNICEF, 2023; UNICEF, 2024). These overlapping health risks have placed tremendous strain on the Philippine primary healthcare system, especially at the grassroots level where Barangay Health Workers (BHWs) serve as frontline providers of health promotion, disease prevention, and community surveillance.

Scholarly literature consistently emphasizes that effective communicable disease control depends on community engagement, health literacy, and well-supported local health systems (Scott et al., 2018; WHO, 2023). Community health workers, such as BHWs, are recognized as essential actors in enhancing vaccination uptake, facilitating case detection, and ensuring treatment adherence. International studies highlight their contributions in diverse health contexts; however, in the Philippines, limited research has focused on how BHWs manage the simultaneous burden of multiple communicable diseases in their communities. This research gap is particularly concerning given the overlapping epidemiological threats of COVID-19, TB, and measles, which require an integrated and coordinated response at the local level.

The central problem addressed in this study is the lack of a comprehensive understanding of the preventive health measure practices of Barangay Health Workers in controlling communicable diseases. While BHWs are mandated to promote health and prevent disease at the grassroots level, little is known about how they implement preventive measures across different diseases simultaneously, and how existing organizational and systemic challenges affect their effectiveness. This lack of evidence hampers efforts to design stronger, more sustainable health programs that can build resilience against recurring outbreaks and emerging threats.

This study examined the preventive health practices of Barangay Health Workers against COVID-19, Tuberculosis, and Measles in selected barangays of Cainta, Rizal, during 2023–2024. Understanding the role of BHWs within an integrated framework is essential for designing sustainable grassroots-level interventions and strengthening local health system resilience. This study contributes to the discourse on primary healthcare in developing countries by generating evidence that can inform training programs, improve institutional

support, and guide public health policies. Its findings will not only enhance the effectiveness of disease prevention at the community level but also contribute to the Philippines' broader capacity to respond to both current and future communicable disease threats. Ultimately, the study seeks to reinforce the vital role of BHWs as the foundation of public health service delivery in local communities.

Research Questions

This study focused on the preventive health measure practices of Barangay Health Workers against Coronavirus Disease (COVID-19), Tuberculosis, and Measles in selected barangays of Cainta, Rizal, during the years 2023–2024. Specifically, it aimed to answer the following questions:

1. What preventive measures against communicable diseases are being implemented in the selected barangays?
2. What are the differences in preventive measures against COVID-19, Tuberculosis, and Measles among the selected barangays?
3. What controlling mechanisms are practiced against communicable diseases in terms of prevention, detection, and response—including surveillance and laboratory testing, preparedness and response, evidence-based prevention policy, and public health communication—and organization and delivery, such as leadership and governance, information systems and research capacity, financing and infrastructure, and partnerships and networks?
4. What enhanced health programs can be proposed to improve prevention against communicable diseases?

Literature Review

Preventive Measures Against Communicable Diseases

Preventive health measures are central to reducing the transmission of communicable diseases such as COVID-19, TB, and measles. The literature emphasizes core strategies such as vaccination, early detection, hygiene practices, use of personal protective equipment (PPE), and health education (Journal of Preventive Medicine, 2023; Tjalvin, 2022; WHO, 2022).

For COVID-19, preventive measures include wearing masks, practicing hand hygiene, maintaining physical distancing, and isolating confirmed cases (Boregowda, Jain, Khanna, & Gupta, 2020; WHO, 2022). Meta-analyses confirm that mask use, handwashing, and distancing substantially reduce incidence and mortality (Talic et al., 2021). Likewise, consistent hand hygiene timing after exposure reduces infection risk by up to 97% (Lio, Wall, Silwal, Hamal, & Manandhar, 2021). Even post-vaccination, preventive behaviors such as mask use remained consistent among populations, although mobility and travel increased (Yamamura, Koska, Tsutsui, & Ohtake, 2022).

For tuberculosis (TB), essential preventive strategies are BCG vaccination, cough etiquette, ensuring proper ventilation, and timely diagnosis and treatment initiation (TB Alert, n.d.; Vesga et al., 2019; WHO, 2022). Studies highlight that cough etiquette and administrative controls remain central to TB prevention (Madzinga, Tshitangano, Raliphaswa, & Razwiedani, 2022), and workplace implementation in the Philippines has shown both promise and challenges in compliance (Roxas et al., 2023). Natural ventilation systems for TB treatment centers are also being modeled locally to reduce airborne transmission (Barroso, Cuenco, Paloma, & Bragat, 2021). International guidelines emphasize infection control training, proper respiratory hygiene, and consistent use of protective equipment (WHO, 2019; Centers for Disease Control and Prevention [CDC], 2023).

For measles, prevention relies primarily on immunization through the measles-mumps-rubella (MMR) vaccine. Outbreaks in the Philippines have been linked to low vaccination coverage and misconceptions about vaccines (CDC, 2020b; WHO, 2022). Recent studies confirm that declining MCV1 coverage continues to drive outbreaks (San Juan, 2024), as seen in the Bangsamoro region during 2023–2024 where thousands of cases were recorded despite vaccination drives (San Juan, 2024). Low vaccine confidence and misinformation remain significant barriers, but human-centered design interventions are showing promise in restoring trust in vaccination campaigns (Reñosa, Nicolasora, Verde, & Silvestre, 2023). Global reports emphasize that herd immunity requires at least 95% coverage, yet measles coverage remains at around 84% worldwide (WHO, 2025a).

Differences in Preventive Measures Across Diseases

Preventive measures differ significantly across the three diseases due to their distinct modes of transmission and interventions. COVID-19 prevention emphasizes non-pharmaceutical interventions such as mask use and distancing because of asymptomatic spread (Talic et al., 2021; Lio et al., 2021). TB prevention relies on respiratory hygiene, ventilation, and adherence to long-term treatment, reflecting its airborne nature (Madzinga et al., 2022; Roxas et al., 2023). Measles prevention highlights mass immunization and herd immunity thresholds, as high vaccination coverage is critical to stopping outbreaks (San Juan, 2024; Reñosa et al., 2023; WHO, 2025a). These differences illustrate the need to tailor programs according to each disease while ensuring integration at the community level.

Control Mechanisms for Disease Prevention and Response

Beyond individual preventive practices, effective public health response requires robust control mechanisms. The National Framework for Communicable Disease Control (National Framework for Communicable Disease Control, 2014) emphasizes surveillance, laboratory testing, preparedness, and evidence-based policies, supported by effective communication strategies (WHO, 2022). Governance structures, reliable information systems, and well-trained health personnel are essential for early detection and timely

response (WHO, 2022). Additionally, financing and infrastructure play a crucial role, as flexible funding enables the rapid mobilization of resources (Wensing, Sales, Armstrong, & Wilson, 2020). Partnerships and networks across different sectors further enhance program reach, coordination, and sustainability, particularly at the barangay level where BHWs operate. A syndromic, integrated approach to lung health, as recommended by WHO (2025b), combines TB, respiratory, and community health management, offering a framework for strengthening grassroots prevention.

Enhanced Health Programs and Best Practices

The literature highlights the importance of strengthening and innovating health programs to sustain disease prevention. A robust safety culture, in which leadership models preventive practices and empowers frontline workers, is associated with improved outcomes (Marsden, 2021; Rosen et al., 2019). Implementation science offers frameworks for adapting evidence-based practices to local settings, including the use of digital health tools, infection control protocols, triage systems, and integrated health education (Wensing et al., 2020). Strengthening surveillance, expanding vaccination campaigns, and reinforcing community-based health education are also consistently recommended as best practices for long-term resilience (WHO, 2022; WHO, 2025a).

Synthesis

The literature demonstrates that effective prevention of communicable diseases requires a combination of disease-specific interventions and system-level control mechanisms. COVID-19, TB, and measles differ in modes of transmission and preventive strategies, yet their control is interconnected at the grassroots level where BHWs serve as key actors. Strengthening community-based programs, governance, and evidence-based policies—together with the introduction of enhanced, integrated health programs—offers a pathway toward more sustainable communicable disease prevention in the Philippines.

Methodology

Research Design

This study employed a quantitative descriptive-comparative research design, which systematically collects and analyzes numerical data to describe current practices and identify differences across groups (Creswell & Creswell, 2018). The quantitative approach was chosen to measure variables in a precise and objective manner, allowing for statistical analysis and comparability of results (Bhandari, 2022). The descriptive component enabled a detailed documentation of the preventive health measures practiced by Barangay Health Workers (BHWs) in selected barangays of Cainta, Rizal, while the comparative component facilitated the identification of variations in these practices across different groups of respondents (Polit & Beck, 2021). This design was considered particularly suitable for public health research, as it provides data-driven insights into community-level health interventions, thereby supporting evidence-based policy recommendations. By adopting this approach, the researchers obtained measurable, reliable, and generalizable findings that addressed the study's objectives while maintaining methodological rigor.

Respondents

Cainta is a first-class urban municipality in the province of Rizal, Philippines, with a population of over 370,000 residents distributed across seven barangays (Philippine Statistics Authority [PSA], 2023). It is among the most populous and economically progressive municipalities in the country, characterized by rapid urbanization and high population density (Department of the Interior and Local Government [DILG], 2022). These conditions contribute to public health challenges that highlight the vital role of Barangay Health Workers (BHWs) in promoting preventive care and early disease detection at the community level. BHWs are trained community volunteers recognized under Republic Act No. 7883, serving as the link between grassroots communities and the formal health system (Official Gazette, 1995). They provide basic health services, including health education, disease prevention, and program implementation.

In this study, the respondents for the quantitative phase were BHWs from four purposely selected barangays in Cainta—San Andres, San Juan, San Isidro, and Sto. Domingo. From the total BHW population of 256 in these barangays, 218 participated in the survey, consisting of 61 from San Andres, 83 from San Juan, 31 from San Isidro, and 43 from Sto. Domingo. Simple random sampling was employed to ensure fair representation among participants. Demographic data collected included age (ranging from 25 to 55 years and above), gender, professional role or position, and years of experience in health service delivery.

Instrument

The primary tool for the quantitative phase was a researcher-designed structured questionnaire, which aimed to capture the preventive health measures and disease control mechanisms implemented by Barangay Health Workers (BHWs) in Cainta, Rizal. The instrument was developed based on the researchers' community-level experience and relevant literature on quantitative instrument design and health research methodology (Creswell & Creswell, 2018; Polit & Beck, 2021). It comprised two sections: (1) preventive health measures, including health promotion, immunization, sanitation, and other community interventions; and (2) disease control mechanisms, focusing on prevention, detection, response, and organizational aspects such as surveillance, leadership, communication, infrastructure, and intersectoral partnerships. Responses were measured using a four-point Likert scale, with the following ranges: 4 = Fully Practiced (3.50–4.00), 3 = Practiced (2.50–3.49), 2 = Moderately Practiced (1.50–2.49), and 1 = Not Practiced (1.00–1.49).

Content validity was established through review by a panel of five health experts, whose feedback informed revisions for clarity, appropriateness, and comprehensiveness. To further ensure usability, a pilot test with BHWs outside the final study sample was conducted to assess clarity, timing, and comprehension. Reliability testing using Cronbach's alpha produced coefficients of 0.80 or higher, confirming internal consistency and demonstrating the reliability of the instrument (Tavakol & Dennick, 2011).

Procedure

Prior to fieldwork, the researchers secured adviser endorsement and ethics clearance, and formal requests were submitted to the Barangay Captains and health center officers of San Andres, Sto. Domingo, San Isidro, and San Juan. Schedules and venue access were coordinated with focal persons, while participant protections and study objectives were explained. The official roster identified 256 active BHWs, from which 218 were selected through proportionate simple random sampling, with a reserve list prepared for nonresponses, and the questionnaire was finalized after incorporating expert and pilot-test feedback. Participants received a plain-language information sheet outlining the study, voluntary participation, withdrawal rights, and confidentiality measures, in compliance with the Data Privacy Act of 2012 (Republic Act No. 10173, 2012). After reviewing the information sheet, written consent was obtained.

Data collection was conducted using self-administered paper questionnaires, available in English or Filipino, in private settings at barangay health centers, with the process completed over five to seven working days. Daily checks ensured completeness and proper coding of nonresponses, while completed questionnaires were sealed, securely transported, assigned unique codes, stripped of identifying information, and stored in a locked container. Data were double-entered into statistical software, with discrepancies reconciled, missing or out-of-range values screened, and corrective actions systematically documented.

Data Analysis

Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize demographic and practice variables. Reliability was assessed using Cronbach's alpha, along with 95% confidence intervals, to establish internal consistency (Tavakol & Dennick, 2011). Comparative analyses were conducted using independent-samples t-tests for two-group variables and one-way ANOVA with Tukey post-hoc tests for multiple-group comparisons, while nonparametric alternatives such as the Mann–Whitney U and Kruskal–Wallis tests were applied when assumptions of normality or homogeneity were not met (Field, 2018).

Statistical significance was set at $\alpha = .05$, with effect sizes reported using Cohen's d for mean differences and eta squared (η^2) for variance explained, following established guidelines (Cohen, 1988; Lakens, 2013). Digital data were stored on password-protected devices, with de-identified master files kept separate from linkage keys, and all identifying records were securely destroyed in accordance with institutional policy.

Ethical Considerations

Ethical standards were strictly upheld in the quantitative phase of this study. Informed consent was obtained from all respondents prior to participation, and they were clearly informed of their right to withdraw at any point without negative consequences. Participation was voluntary, and both anonymity and confidentiality were ensured throughout the research process.

Data were used exclusively for academic purposes, with questionnaires administered at times that did not disrupt the respondents' official duties. The study adhered to the ethical guidelines approved by the researchers' institution and thesis adviser, consistent with internationally recognized principles of ethical research involving human participants (World Medical Association [WMA], 2013).

Results and Discussion

Problem 1. Preventive Measures Against Communicable Diseases Practices in the Selected Barangay

1.1 Coronavirus Diseases (COVID-19)

Table 1 presents the preventive measures against communicable diseases practices in the selected barangay in terms of Coronavirus Diseases (COVID-19).

The results revealed varying levels of adherence to COVID-19 preventive measures across the four selected barangays in Cainta. In terms of physical distancing, all barangays practiced the six-foot distancing rule, with mean scores ranging from 3.10 in Sto. Domingo to 3.49 in San Isidro, though none reached the "fully practiced" level.

This indicates that while distancing protocols were observed, they were not consistently implemented, a finding that echoes reports of declining compliance due to pandemic fatigue and socioeconomic challenges (Boregowda et al., 2020; WHO, 2022). Hand hygiene practices, such as encouraging residents to wash their hands for at least 20 seconds or use alcohol-based sanitizers, were rated as fully practiced in all barangays, with mean scores between 3.54 and 3.85. This strong adherence aligns with global evidence confirming the effectiveness of proper hand hygiene in reducing infection risks, with studies showing a reduction of up to 97% in transmission when consistently applied (Lio et al., 2021; WHO, 2022).

Table 1. *Preventive Measures Practices in the Selected Barangays in Terms of Coronavirus Diseases*

Coronavirus Diseases(COVID-19)	*Brgy. San Andres*	*Brgy. Sto. Domingo*	*Brgy. San Isidro*	*Brgy. San Juan*
Remind people to maintain as a 6-foot distance long from one another	3.31 (P)	3.10 (P)	3.49 (P)	3.28 (P)
Encourage people to wash hands with soap and water or use a hand sanitizers with alcohol for at least 20 seconds	3.54 (FP)	3.62 (FP)	3.85 (FP)	3.67 (FP)
Advise people who were ill to remain at home and only seek medical attention if their symptoms increased or got worsen	3.23 (P)	3.61 (FP)	3.78 (FP)	3.54 (FP)
Guide people to wear a mask to lower the danger of spreading their illness to others and that sick people should wear masks	3.48 (P)	3.56 (FP)	3.48 (P)	3.51 (FP)
Over-all mean	3.45 (P)	3.50 (FP)	3.65 (FP)	3.53 (FP)

Legend: *1 = 3.50–4.00, Fully Practiced (FP); 2 = 2.50–3.49, Practiced (P); 3 = 1.50–2.49, Moderately Practiced (MP); 4 = 1.00–1.49, Not Practiced (NP)*

Advising ill individuals to stay at home was practiced to a varying degree across barangays, with San Andres reporting only "practiced" levels (M = 3.23), while Sto. Domingo, San Isidro, and San Juan reached "fully practiced" levels (M = 3.54–3.78). This variation reflects the influence of economic and social factors, as compliance with home isolation is often constrained by livelihood needs and limited household resources (Talic et al., 2021).

Meanwhile, mask-wearing guidance was widely implemented, with barangays reporting mean scores between 3.48 and 3.56. Sto. Domingo and San Juan achieved fully practiced levels, while San Andres and San Isidro were rated as only practiced. These findings support existing evidence that mask use is one of the most effective community-level interventions for lowering COVID-19 transmission (Talic et al., 2021; Yamamura et al., 2022).

When overall mean scores were considered, San Isidro (M = 3.65) demonstrated the highest level of compliance, followed by San Juan (M = 3.53) and Sto. Domingo (M = 3.50), all of which were fully practiced. San Andres, however, had the lowest overall mean (M = 3.45), indicating only "practiced" adherence. These differences were statistically significant ($F = 3.14$, $p < 0.05$), suggesting that barangay-level variations in governance, resource allocation, and community engagement shaped preventive practices.

This aligns with broader literature emphasizing that the success of preventive measures is influenced not only by individual behavior but also by local systems of leadership, support, and policy enforcement (Wensing, Sales, Armstrong, & Wilson, 2020; Marsden, 2021). Overall, the findings highlight that while hand hygiene and mask use were strongly implemented, physical distancing and home isolation remain areas requiring reinforcement.

Tuberculosis

Table 2 presents the preventive measures against communicable diseases practiced in the selected barangay, specifically regarding tuberculosis.

Table 2. *Preventive Measures Against Communicable Diseases Practices in the Selected Barangays in Terms of Tuberculosis*

Tuberculosis	*Brgy. San Andres*	*Brgy. Sto. Domingo*	*Brgy. San Isidro*	*Brgy. San Juan*
Practice air out rooms with TB patients	3.26 (P)	3.38 (P)	3.14 (P)	3.63 (FP)
Wearing facemask while TB patients are talking	3.41 (P)	3.19 (P)	3.36 (P)	3.48 (P)
Provide vaccine to newborn child for TB prevention	3.56 (FP)	3.23 (P)	3.45 (P)	3.37 (P)
Practice ventilation and proper hygiene	3.27 (P)	3.49 (P)	3.43 (P)	3.28 (P)
Over-all mean	3.38 (P)	3.32 (P)	3.35 (P)	3.44 (P)

Legend: *1 = 3.50–4.00, Fully Practiced (FP); 2 = 2.50–3.49, Practiced (P); 3 = 1.50–2.49, Moderately Practiced (MP); 4 = 1.00–1.49, Not Practiced (NP)*

The findings on tuberculosis (TB) preventive practices revealed that barangays in Cainta generally rated their implementation as "practiced," with overall means ranging from 3.32 in Sto. Domingo to 3.44 in San Juan. Specifically, the practice of airing out rooms with TB patients was rated as "practiced" in San Andres (M = 3.26), Sto. Domingo (M = 3.38), and San Isidro (M = 3.14), while San Juan achieved a "fully practiced" level (M = 3.63).

This indicates that ventilation practices were inconsistently observed across barangays, despite strong global evidence that adequate airflow significantly reduces the risk of airborne TB transmission (WHO, 2022; Barroso, Cuenco, Paloma, & Bragat, 2021). The use of facemasks when interacting with TB patients was rated as "practiced" in all barangays, with mean scores between 3.19 and 3.48.

This reflects moderate but not full compliance, consistent with findings that mask adherence in community and workplace settings remains uneven due to both availability and behavioral challenges (Madzinga et al., 2022; Roxas et al., 2023).

Vaccination for newborns using the Bacille Calmette-Guérin (BCG) vaccine received the highest rating in San Andres (M = 3.56, fully practiced), while the other three barangays rated it as "practiced" (M = 3.23–3.45). Although BCG vaccination is a cornerstone of TB prevention, varying ratings may reflect differences in immunization coverage and program prioritization across barangays.

This aligns with the WHO (2019) report that achieving high BCG coverage requires strong local program delivery and parental health-seeking behaviors. Similarly, the practice of general ventilation and proper hygiene was consistently rated as "practiced" across all barangays (M = 3.27–3.49), showing that infection-control behaviors were in place but not consistently maximized.

Overall, San Juan (M = 3.44) reported the highest mean level of TB preventive practice, while Sto. Domingo (M = 3.32) showed the lowest. These results highlight that while barangays consistently implemented key TB prevention measures such as mask-wearing, hygiene, and vaccination, only a few demonstrated full compliance with ventilation and immunization strategies. The literature emphasizes that TB control is highly dependent on consistent infection control, early vaccination, and sustained preventive behaviors at the community level (WHO, 2022; Vesga et al., 2019). The observed differences across barangays underscore the importance of strengthening localized health campaigns, improving vaccine delivery systems, and reinforcing infection-control training for Barangay Health Workers (BHWs).

Measles

Table 3 shows the preventive measures against communicable diseases practices in the selected barangay in terms of measles.

Table 3. *Preventive Measures Against Communicable Diseases Practices in the Selected Barangays in terms of Measles*

Measles	*Brgy. San Andres*	*Brgy. Sto. Domingo*	*Brgy. San Isidro*	*Brgy. San Juan*
Provide measles-containing vaccination, which is typically given as part of the measles-mumps-rubella (MMR) vaccine	3.61 (FP)	3.54 (FP)	3.33 (P	3.42 (P)
Administer post-exposure prophylaxis (PEP) for the people who have exposed to measles	3.34 (P)	3.27 (P)	3.29 (P)	3.41 (P)
Practice airborne measures when caring for measles patients	3.44 (P)	3.65 (FP)	3.51 (FP)	3.52 (FP)
Give vitamin A to children after diagnosing with measles	3.31 (P)	3.22 (P)	3.54 (FP)	3.27 (P)
Over-all mean	3.43 (P)	3.42 (P)	3.42 (P)	3.41 (P)

Legend: *1 = 3.50–4.00, Fully Practiced (FP); 2 = 2.50–3.49, Practiced (P); 3 = 1.50–2.49, Moderately Practiced (MP); 4 = 1.00–1.49, Not Practiced (NP)*

The findings on preventive measures against measles across the four barangays reveal generally positive practices, though with variations in effectiveness. Brgy. San Andres (overall mean = 3.43, P) and Brgy. Sto. Domingo (3.42, P) reflected consistent but moderate practice of preventive measures, while Brgy. San Isidro (3.42, P) and Brgy. San Juan (3.41, P) showed similar levels of implementation. The most strongly practiced measure was the provision of measles-containing vaccination, typically given as part of the measles-mumps-rubella (MMR) vaccine, which was rated as frequently practiced (FP) in Brgy. San Andres (3.61) and Brgy. Sto. Domingo (3.54), though only positively practiced (P) in San Isidro (3.33) and San Juan (3.42).

This finding aligns with WHO (2022), which emphasizes that routine immunization remains the cornerstone of measles prevention. Airborne precautionary measures also showed frequent practice in the Brgy. Sto. Domingo (3.65), San Isidro (3.51), and San Juan (3.52) are consistent with CDC (2021) recommendations to minimize transmission in healthcare and community settings.

Meanwhile, other measures such as administering post-exposure prophylaxis (PEP) and providing vitamin A supplementation were only moderately practiced, with most barangays rating them as positive practice (P). These interventions are crucial, as supported by Perry et al. (2022), who highlight that PEP and vitamin A supplementation reduce measles-related complications and mortality.

Overall, while immunization and airborne precautions are relatively strong, other complementary preventive strategies appear underutilized, suggesting the need for stronger implementation and awareness campaigns.

Problem 2. Differences in the Preventive Measures Against Diseases Among the Selected Barangays in Cainta Rizal

Table 4 shows the differences in the preventive measures against diseases among the selected barangays in Cainta Rizal.

The analysis of variance (ANOVA) revealed significant differences in the practices on preventive measures against communicable diseases across the selected barangays. For COVID-19, the computed F-value of 3.14 exceeded the tabular value of 2.92 at a 0.05 level of significance, leading to the rejection of the null hypothesis. This indicates that the level of practice on COVID-19 preventive measures significantly differed among the respondents.

Table 4. *ANOVA Table for Differences in the Preventive Measures Against Diseases Among the Selected barangays in Cainta Rizal*

Areas of Evaluation		*Sum of Squares*	*Df*	*Mean Square*	*F-com*	*F-tab*	*Decision*	*Remarks*
Covid-19	Between Groups	13.82	2	4.61	3.14	2.92	Reject	Significant
	Within Groups	47.43	276	1.53				
	Total	61.25	278					
Tuberculosis	Between Groups	3.64	2	1.21	3.68	2.92	Reject	Significant
	Within Groups	30.07	276	0.97				
	Total	33.71	278					
Measles	Between Groups	11.08	2	3.69	4.56	2.92	Reject	Significant
	Within Groups	36.58	276	1.18				
	Total	47.66	278					

***Legend**: Df = Degrees of freedom; F-com = Computed F-value; F-tab = Tabular F-value at 0.05 level of significance; Decision = Statistical decision based on comparison of F-com and F-tab; Reject = Null hypothesis is rejected (there is a significant difference); Accept = Null hypothesis is accepted (no significant difference); Remarks = Indicates whether the result is Significant or Not Significant*

Similarly, for tuberculosis, the computed F-value of 3.68 was higher than the F-tabular value of 2.92, signifying a significant variation in preventive practices across barangays. In the case of measles, the computed F-value of 4.56 also surpassed the critical value of 2.92, resulting in the rejection of the null hypothesis and confirming significant differences in measles prevention practices among the groups. Overall, these results suggest that preventive health practices against COVID-19, tuberculosis, and measles varied significantly among the barangays included in the study.

Problem 3. Controlling Mechanisms Practiced Against Communicable Diseases

The following tables illustrate the controlling mechanisms practiced against communicable diseases.

Prevention, Detection and Response

Surveillance and Laboratory Testing

Table 5 projects the controlling mechanisms against communicable diseases are practiced in terms of surveillance and laboratory testing.

Across barangays, surveillance and laboratory testing were generally practiced, with San Juan posting the highest overall mean = 3.51 (FP), followed by San Isidro = 3.48 (P), San Andres = 3.45 (P), and Sto. Domingo = 3.44 (P). Looking at components, "optimize surveillance through better coordination" was fully practiced in Sto. Domingo (3.54) and San Isidro (3.50) were practiced, but only in San Andres (3.47) and San Juan (3.45), suggesting uneven cross-unit coordination and referral linkages. "Consult patient for immediate diagnosis" was the standout in San Juan (3.58, FP) while the other barangays remained at practiced levels (3.42–3.49), implying San Juan has stronger pathways for rapid clinical/laboratory assessment. For "monitor patient condition regularly," San Isidro (3.51, FP) led, with the others at practice (3.38–3.49), indicating San Isidro's relative strength in follow-up and case management.

Table 5. *Controlling Mechanisms Against Communicable Diseases Practiced in Terms of Surveillance and Laboratory Testing*

Surveillance and Laboratory Testing	*Brgy. San Andres*	*Brgy. Sto. Domingo*	*Brgy. San Isidro*	*Brgy. San Juan*
Optimize surveillance through better coordination	3.47 (P)	3.54 (FP)	3.50 (FP)	3.45 (P)
Consult patient for immediate diagnosis	3.49 (P)	3.42 (P)	3.44 (P)	3.58 (FP)
Monitor patient condition regularly	3.39 (P)	3.38 (P)	3.51 (FP)	3.49 (P)
Over-all mean	3.45 (P)	3.44 (P)	3.48 (P)	3.51 (FP)

***Legend:** 1 = 3.50–4.00, Fully Practiced (FP); 2 = 2.50–3.49, Practiced (P); 3 = 1.50–2.49, Moderately Practiced (MP); 4 = 1.00–1.49, Not Practiced (NP)*

These patterns align with the literature that effective communicable-disease control depends on robust, coordinated surveillance linked to rapid diagnosis and consistent follow-up. The National Framework for Communicable Disease Control identifies surveillance, laboratory testing, and preparedness as core pillars that require clear governance and inter-facility coordination (NFCDC, 2014). WHO (2022/2023) likewise emphasizes the need for integrated surveillance systems, timely case detection, and standardized information flows to accelerate decision-making and outbreak response. Differences across barangays are consistent with implementation research

showing that local leadership, feedback loops, and resourcing drive variability in execution—even when policies are uniform (Wensing, Sales, Armstrong, & Wilson, 2020). Put together, the data suggest strengths are distributed—Sto. Domingo and San Isidro excel in coordination, San Juan in rapid diagnosis, and San Isidro in regular monitoring—but standardization is needed to raise all components to "fully practiced," particularly inter-barangay coordination and routine follow-up protocols supported by reliable information systems (NFCDC, 2014; WHO, 2022; Wensing et al., 2020).

Preparedness and Response

Table 6 illustrates that the controlling mechanisms for communicable diseases are implemented in terms of preparedness and response.

Table 6. *Controlling Mechanisms Practiced Against Communicable Diseases in Terms of Preparedness and Response*

Preparedness and Response	*Brgy. San Andres*	*Brgy. Sto. Domingo*	*Brgy. San Isidro*	*Brgy. San Juan*
Plan to integrate surveillance and testing response	3.54 (FP)	3.41 (P)	3.42 (P)	3.49 (FP)
Update threat-specific preparedness regularly	3.39 (P)	3.64 (FP)	3.48 (P)	3.42 (P)
Timely and effective responses to Communicable Disease threat	3.57 (FP)	3.44 (P)	3.61 (FP)	3.57 (FP)
Over-all mean	3.50 (FP)	3.49 (P)	3.50 (FP)	3.49 (P)

Legend: *1 = 3.50–4.00, Fully Practiced (FP); 2 = 2.50–3.49, Practiced (P); 3 = 1.50–2.49, Moderately Practiced (MP); 4 = 1.00–1.49, Not Practiced (NP)*

Based on the results of the study, the level of preparedness and response across the four barangays generally shows a satisfactory status, with variations in their specific strengths. Barangay San Andres and Barangay San Isidro, both with an overall mean of 3.50 and rated as Fully Prepared, demonstrated stronger alignment with surveillance integration, preparedness updating, and timely responses to communicable disease threats. Barangay San Juan and Barangay Sto. Domingo, on the other hand, with an overall mean of 3.49 and rated as Prepared, reflected adequate readiness but still have areas for improvement in order to elevate their preparedness to a higher level. Specifically, Barangay San Andres and San Juan were found to be Fully Prepared in terms of integrating surveillance and testing response as well as ensuring timely and effective responses, which highlight their operational readiness. Barangay San Isidro stood out for its Fully Prepared rating in timely and effective responses ($\bar{x}$ = 3.61), suggesting a strong capacity for real-time action during health threats. Barangay Sto. Domingo, meanwhile, earned the highest rating in regularly updating threat-specific preparedness ($\bar{x}$ = 3.64, FP), reflecting its strength in maintaining preparedness plans, although its performance in other areas lowered its overall mean to a Prepared status.

These findings suggest that while all barangays exhibit commendable levels of preparedness, specific gaps remain that must be addressed to achieve consistent Fully Prepared ratings. The results are consistent with the framework of the World Health Organization (WHO, 2022), which underscores the importance of timely response, continuous updating of preparedness plans, and integration of surveillance with testing systems in ensuring effective health emergency preparedness. Likewise, Shuaib et al. (2021) emphasized that local-level preparedness, particularly within community health systems, plays a crucial role in determining the effectiveness of responses to disease outbreaks. Boregowda et al. (2020) also highlighted the significance of regular drills, updated plans, and localized readiness in mitigating the risks posed by communicable diseases. Thus, the findings indicate that while preparedness is evident across the four barangays, enhancing consistency in updating and implementing threat-specific measures will be key to achieving higher levels of resilience against health emergencies.

Evidence-Based Prevention Policy

Table 7 describes the controlling mechanisms against communicable diseases that are practiced in terms of evidence-based prevention policy.

Table 7. *Controlling Mechanisms Against Communicable Diseases Practiced in terms of Evidence-based Prevention Policy*

Evidence-based Prevention Policy	*Brgy. San Andres*	*Brgy. Sto. Domingo*	*Brgy. San Isidro*	*Brgy. San Juan*
Practice prevention policy for Communicable Diseases	3.49 (P)	3.62 (FP)	3.29 (P)	3.49 (P)
Practice systematic and collaborative policy development	3.33 (P)	3.56 (FP)	3.68 (FP)	3.57 (FP)
Engage with researcher and commissioning policy	3.58 (FP)	3.54 (FP)	3.44 (P)	3.34 (P)
Over-all mean	3.47 (P)	3.57 (FP)	3.47 (P)	3.46 (P)

Legend: *1 = 3.50–4.00, Fully Practiced (FP); 2 = 2.50–3.49, Practiced (P); 3 = 1.50–2.49, Moderately Practiced (MP); 4 = 1.00–1.49, Not Practiced (NP)*

The findings on evidence-based prevention policy reveal varying levels of implementation across the four barangays. Barangay Sto. Domingo obtained the highest overall mean ($\bar{x}$ = 3.57) and was rated as Fully Prepared, showing its strong commitment to integrating

systematic and collaborative policy development ($\bar{x}$ = 3.56, FP) and engaging with researchers in policy-related activities ($\bar{x}$ = 3.54, FP). Barangay San Isidro, with an overall mean of 3.47 and rated as Prepared, performed notably well in practicing systematic and collaborative policy development ($\bar{x}$ = 3.68, FP), which was the highest rating among all barangays, but its weaker scores in prevention policy practice ($\bar{x}$ = 3.29, P) and engagement with research ($\bar{x}$ = 3.44, P) lowered its overall preparedness level. Similarly, Barangay San Andres ($\bar{x}$ = 3.47, P) showed strengths in engaging with researchers and commissioning policy ($\bar{x}$ = 3.58, FP), but only achieved Prepared in other indicators, limiting its overall rating. Barangay San Juan, with an overall mean of 3.46 and rated as Prepared, demonstrated commendable efforts in systematic and collaborative policy development ($\bar{x}$ = 3.57, FP), yet was constrained by lower performance in other areas, particularly in research engagement ($\bar{x}$ = 3.34, P).

Overall, the results highlight that while most barangays are at the Prepared level in terms of evidence-based prevention policies, Barangay Sto. Domingo emerges as a model of Full Preparedness, demonstrating a stronger integration of evidence, collaboration, and research into policy-making. These findings align with the recommendations of the World Health Organization (WHO, 2022), which emphasize the role of evidence-based policies, collaborative frameworks, and research integration in strengthening community health systems. Consistent with the work of Nutbeam et al. (2021), the evidence suggests that building sustainable and effective health policies requires not only structured frameworks but also active community and research engagement. This underscores the need for other barangays to enhance their mechanisms for collaboration and research application in policy development in order to elevate their preparedness status.

Public Health Communication

Table 8 describes the controlling mechanisms against communicable diseases that are practiced in terms of public health communication.

Table 8. *Controlling Mechanisms Against Communicable Diseases Practiced in Terms of Public Health Communication*

Public Health Communication	*Brgy. San Andres*	*Brgy. Sto. Domingo*	*Brgy. San Isidro*	*Brgy. San Juan*
Inform public through evidence-based interventions and evaluation of infectious diseases scientific and technical work	3.55 (FP)	3.64 (FP)	3.61 (FP)	3.52 (FP)
Develop all-hazard health communication guidelines identifying functions and responsibilities	3.62 (FP)	3.47 (P)	3.68 (FP)	3.54 (FP)
Commit the impact of health communications in the Communicable Disease control field	3.51 (FP)	3.42 (P)	3.62 (FP)	3.66 (FP)
Over-all mean	3.56 (FP)	3.51 (FP)	3.64 (FP)	3.57 (FP)

Legend: *1 = 3.50–4.00, Fully Practiced (FP); 2 = 2.50–3.49, Practiced (P); 3 = 1.50–2.49, Moderately Practiced (MP); 4 = 1.00–1.49, Not Practiced (NP)*

The results show that Barangay Health Workers (BHWs) in Cainta frequently practice public health communication strategies in preventing and controlling communicable diseases, as reflected in the overall means ranging from 3.51 to 3.64. Among the barangays, San Isidro (3.64, FP) had the highest overall mean, indicating stronger implementation of evidence-based communication practices. By contrast, Sto. Domingo (3.51, FP) recorded the lowest score, with some items falling only under Practiced (P), suggesting that certain communication mechanisms are less consistently applied in this area.

When examining specific indicators, all barangays reported high ratings in informing the public through evidence-based interventions and evaluation of infectious diseases, showing alignment with WHO (2022, 2023), which emphasizes that effective communicable disease control depends on scientific communication and strong community engagement.

However, the development of all-hazard health communication guidelines revealed disparities. While San Isidro (3.68, FP) scored the highest, Sto. Domingo (3.47, P) lagged behind, indicating weaker role clarification and preparedness protocols. This finding resonates with Wensing et al. (2020), who argue that governance structures and clear guidelines are critical for sustaining communication effectiveness at the community level.

In terms of the impact of health communication on disease control, most barangays reported that this is frequently practiced. Notably, San Juan (3.66, FP) and San Isidro (3.62, FP) rated highly, while Sto. Domingo (3.42, P) again showed lower emphasis. This aligns with Rosen et al. (2019) and Marsden (2021), who highlight that leadership commitment and evaluation of health communication significantly influence program outcomes. Thus, barangays with higher scores demonstrate stronger resilience in communicable disease control, while those with lower scores may need reinforced organizational support.

Overall, the findings suggest that BHWs across the selected barangays are actively engaging in public health communication practices, but the effectiveness varies depending on local governance and institutional support. The strong performance of San Isidro shows the benefits of consistent communication strategies, while the weaker outcomes in Sto. Domingo highlight gaps that need to be addressed through clearer guidelines, capacity building, and leadership commitment. These findings align with international literature emphasizing that evidence-based communication, governance structures, and sustained leadership are essential to effective and sustainable disease prevention.

Organization and Delivery

Leadership and Governance

Table 9 indicates the controlling mechanisms against communicable diseases are practiced in terms of leadership.

Table 9. *Controlling Mechanisms Against Communicable Diseases Practiced in Terms of Leadership and Governance*

Public Health Communication	*Brgy. San Andres*	*Brgy. Sto. Domingo*	*Brgy. San Isidro*	*Brgy. San Juan*
Collaborate to public health care provider to focus on Communicable Diseases priorities and public health needs	3.49 (P)	3.62 (FP)	3.66 (FP)	3.54 (FP)
Clear performance expectations both in terms of identifying Communicable Diseases control and public health needs	3.53 (FP)	3.55 (FP)	3.47 (P)	3.68 (FP)
Participate technical advice and national surveillance activities for education and training	3.45 (P)	3.48 (P)	3.59 (FP)	3.44 (P)
Over-all mean	3.49 (P)	3.55 (FP)	3.57 (FP)	3.55 (FP)

Legend: *1 = 3.50–4.00, Fully Practiced (FP); 2 = 2.50–3.49, Practiced (P); 3 = 1.50–2.49, Moderately Practiced (MP); 4 = 1.00–1.49, Not Practiced (NP)*

The results on Leadership and Governance show varying levels of practice among the barangays, with overall means ranging from 3.49 to 3.57. San Isidro (3.57, FP) recorded the highest overall score, followed closely by Sto. Domingo (3.55, FP) and San Juan (3.55, FP), while San Andres (3.49, P) was slightly lower, placing it only in the Practiced category. This indicates that while leadership and governance in most barangays are frequently practiced, some areas still face gaps in collaboration, performance expectations, and participation in surveillance activities.

Looking at specific indicators, collaboration with healthcare providers on communicable disease priorities was most evident in San Isidro (3.66, FP), reflecting the importance of partnerships in strengthening grassroots health governance. This finding aligns with WHO (2022), which emphasizes that collaborative governance and multi-sectoral partnerships enhance the effectiveness of disease control. Conversely, San Andres (3.49, P) showed weaker collaboration, suggesting challenges in mobilizing coordinated action.

In terms of setting clear performance expectations, San Juan (3.68, FP) ranked the highest, highlighting strong role definition in disease control responsibilities. This is consistent with Marsden (2021), who stressed that leadership with clearly defined expectations fosters accountability and program success. On the other hand, San Isidro (3.47, P) scored lower, indicating that while collaboration is strong, clarity in performance expectations may need improvement.

For participation in technical advice and national surveillance activities, the scores were generally lower across barangays, with only San Isidro (3.59, FP) reaching the Frequently Practiced level. San Andres (3.45, P) and San Juan (3.44, P) had the lowest ratings, suggesting a limited engagement in higher-level technical and surveillance activities. This finding resonates with Wensing et al. (2020), who argue that technical participation and integration into broader surveillance systems are crucial for building capacity and strengthening evidence-based responses at the local level.

Overall, the findings highlight that leadership and governance practices are generally frequent in most barangays, with San Isidro and San Juan showing stronger governance elements, while San Andres lags behind. The lower ratings in surveillance-related activities across all barangays point to a common gap that requires attention. These results underscore the literature's emphasis on the need for strong governance, collaboration, and accountability frameworks (WHO, 2022; Rosen et al., 2019) to enhance the effectiveness of community-level communicable disease control.

Information System and Research Capacity

Table 10 indicates that the controlling mechanisms against communicable diseases are practiced in terms of information systems and research capacity.

Table 10. *Controlling Mechanisms Against Communicable Diseases Practiced in Terms of Information System and Research Capacity*

Information System and Research Capacity	*Brgy. San Andres*	*Brgy. Sto. Domingo*	*Brgy. San Isidro*	*Brgy. San Juan*
Critically depend on the timely and reliable data.	3.52 (FP)	3.67 (FP)	3.47 (P)	3.54 (FP)
Use technologies as enablers for change in Communicable Diseases control and support core communicable Diseases functions of surveillance.	3.61 (FP)	3.66 (FP)	3.63 (FP)	3.44 (P)
Recognize essential source of information for decision making	3.55 (FP)	3.54 (FP)	3.41 (P)	3.68 (FP)
Over-all mean	3.56 (FP)	3.62 (FP)	3.50 (FP)	3.55 (FP)

Legend: *1 = 3.50–4.00, Fully Practiced (FP); 2 = 2.50–3.49, Practiced (P); 3 = 1.50–2.49, Moderately Practiced (MP); 4 = 1.00–1.49, Not Practiced (NP)*

The findings on Information System and Research Capacity indicate that Barangay Health Workers (BHWs) across the four barangays frequently practice information system–related functions, with overall means ranging from 3.50 to 3.62. Sto. Domingo (3.62, FP) recorded the highest overall score, suggesting stronger utilization of timely data and technologies to support disease surveillance. San Andres (3.56, FP) and San Juan (3.55, FP) also scored high, while San Isidro (3.50, FP) had the lowest, reflecting a borderline rating between Practiced and Frequently Practiced. On specific indicators, the use of timely and reliable data was frequently practiced in most barangays, with Sto. Domingo (3.67, FP) ranked the highest. This aligns with WHO (2022), which stresses that reliable data is critical for effective surveillance and decision-making in communicable disease control. However, San Isidro (3.47, P) rated lower, suggesting challenges in consistently accessing or utilizing timely data.

The use of technologies as enablers for surveillance and disease control was also rated highly, particularly in Sto. Domingo (3.66, FP) and San Isidro (3.63, FP), showing positive integration of digital tools into surveillance functions. Still, San Juan (3.44, P) scored lower, indicating limited adoption of technologies to support communicable disease control. This resonates with Wensing et al. (2020), who highlight the role of digital health systems and technological innovations in strengthening grassroots surveillance and public health communication.

Meanwhile, the indicator on recognizing information as an essential source for decision-making showed strong ratings in San Juan (3.68, FP), pointing to effective use of data-driven decision-making at the community level. Conversely, San Isidro (3.41, P) again recorded the lowest score, suggesting possible reliance on traditional practices rather than evidence-based approaches. This finding is consistent with Rosen et al. (2019), who emphasized that the recognition and application of data are central to effective governance and improved outcomes in communicable disease control.

Overall, the results demonstrate that information systems and research capacity are generally well-practiced across barangays, but there are disparities. Sto. Domingo's strong performance reflects a higher reliance on technology and data, while San Isidro lags behind, particularly in timely data use and decision-making integration. These findings support the literature's emphasis that timely data, digital tools, and evidence-based decision-making are indispensable for improving surveillance systems and building resilient community health responses (WHO, 2022; Wensing et al., 2020)

Financing and Infrastructure

Table 11 indicates that the controlling mechanisms against communicable diseases are practiced in terms of financing and infrastructure.

The findings on Financing and Infrastructure show that Barangay Health Workers (BHWs) across the four barangays generally frequently practice the use of medical equipment, facilities, and funding mechanisms to support communicable disease control, with overall means ranging from 3.51 to 3.60. Among the barangays, San Andres (3.60, FP) scored the highest, indicating stronger utilization of resources for disease prevention and management. This was followed by San Isidro (3.56, FP) and Sto. Domingo (3.54, FP), while San Juan (3.51, FP) had the lowest overall mean, though still within the Frequently Practiced range.

Table 11. *Controlling Mechanisms Against Communicable Diseases Practiced in Terms of Financing and Infrastructure*

Financing and Infrastructure	*Brgy. San Andres*	*Brgy. Sto. Domingo*	*Brgy. San Isidro*	*Brgy. San Juan*
Use medical equipment appropriately	3.60 (FP)	3.46 (P)	3.51 (FP)	3.51 (FP)
Use medical facilities in a particular activity	3.57 (FP)	3.64 (FP)	3.56 (FP)	3.56 (FP)
Practice all the funding mechanism activities to control Communicable Diseases	3.63 (FP)	3.53 (FP)	3.61 (FP)	3.45 (P)
Over-all mean	3.60 (FP)	3.54 (FP)	3.56 (FP)	3.51 (FP)

Legend: *1 = 3.50–4.00, Fully Practiced (FP); 2 = 2.50–3.49, Practiced (P); 3 = 1.50–2.49, Moderately Practiced (MP); 4 = 1.00–1.49, Not Practiced (NP)*

On specific indicators, the appropriate use of medical equipment was rated highest in San Andres (3.60, FP), suggesting better practices in managing available health technologies. However, Sto. Domingo (3.46, P) rated this lower, reflecting possible constraints in capacity or equipment management. This supports WHO (2022), which notes that infrastructure and equipment management are vital for ensuring quality in communicable disease prevention and treatment.

The use of medical facilities in specific activities was consistently rated as frequently practiced across all barangays, with Sto. Domingo (3.64, FP) achieved the highest score. This reflects strong facility utilization, in line with Marsden (2021), who emphasized that well-functioning health facilities enhance the delivery of preventive and treatment services.

Meanwhile, the indicator on practicing funding mechanism activities revealed notable differences. San Andres (3.63, FP) and San Isidro (3.61, FP) showed strong engagement in financing-related activities, suggesting better resource mobilization at the grassroots. In contrast, San Juan (3.45, P) was rated lowest, indicating gaps in financial resource management for disease control. This aligns with Wensing et al. (2020), who stress that flexible financing is crucial to support rapid mobilization of resources during outbreaks and

sustain local health programs.

Overall, the results demonstrate that financing and infrastructure practices are generally strong across barangays, particularly in the use of facilities and equipment. However, San Juan and Sto. Domingo exhibited lower scores in resource use and financing mechanisms, which may limit their effectiveness in implementing communicable disease control measures. These findings are consistent with international literature that underscores the importance of adequate financing, efficient infrastructure utilization, and resource management as key enablers of resilient and sustainable health systems (WHO, 2022; Wensing et al., 2020).

Partnerships and networks

Table 12 indicates that the controlling mechanisms against communicable diseases are practiced in terms of partnerships and networks.

Table 12. *Controlling Mechanisms Against Communicable Diseases Practiced in Terms of Partnerships and Networks*

Partnerships and Networks	*Brgy. San Andres*	*Brgy. Sto. Domingo*	*Brgy. San Isidro*	*Brgy. San Juan*
Participate with public health activities to implement policies that improve the nation's health	3.39 (P)	3.45 (P)	3.52 (FP)	3.54 (FP)
Engage in non-government sector and the broader community to help the local government and community leader/s for the enhancement of local preparedness activities	3.48 (P)	3.49 (P)	3.57 (FP)	3.44 (P)
Communicate with the public about the interconnected efforts needed to prevent and control Communicable Diseases and their role in protecting it.	3.44 (P)	3.51 (FP)	3.46 (P)	3.59 (FP)
Over-all mean	3.43 (P)	3.48 (P)	3.51 (FP)	3.52 (FP)

Legend: *1 = 3.50–4.00, Fully Practiced (FP); 2 = 2.50–3.49, Practiced (P); 3 = 1.50–2.49, Moderately Practiced (MP); 4 = 1.00–1.49, Not Practiced (NP)*

The findings on Partnerships and Networks reveal that practices across the four barangays vary between Practiced (P) and Frequently Practiced (FP), with overall means ranging from 3.43 to 3.52. San Juan (3.52, FP) and San Isidro (3.51, FP) recorded the highest overall ratings, reflecting stronger community engagement and collaboration with stakeholders, while San Andres (3.43, P) and Sto. Domingo (3.48, P) lagged behind, indicating weaker partnership efforts. This suggests that while partnerships and networks are being implemented, they are not yet consistently strong across all barangays.

For the indicator on participation in public health activities to implement national health policies, San Juan (3.54, FP) and San Isidro (3.52, FP) rated highest, reflecting alignment with national health initiatives. In contrast, San Andres (3.39, P) had the lowest score, indicating limited integration with broader public health activities. This supports WHO (2022), which highlights that local-level participation in national health programs strengthens coherence in communicable disease prevention.

In terms of engagement with non-governmental sectors and the broader community, San Isidro (3.57, FP) performed best, indicating effective collaboration with civil society and community leaders to enhance local preparedness. Meanwhile, San Juan (3.44, P) had the lowest score, pointing to gaps in non-governmental engagement. This finding aligns with Rosen et al. (2019), who noted that collaborative partnerships involving actors beyond government are essential for building sustainable and inclusive public health systems.

In terms of communicating with the public about interconnected disease control efforts, San Juan (3.59, FP) stood out as the highest, showing strong emphasis on public awareness and participation. San Andres (3.44, P) and San Isidro (3.46, P) rated lower, suggesting that despite engagement with stakeholders, communication with the broader public requires improvement. This finding aligns with Wensing et al. (2020), who emphasized that transparent and coordinated communication fosters community trust and participation in health programs.

Overall, the results show that San Juan and San Isidro demonstrate stronger partnership and networking practices compared to San Andres and Sto. Domingo, which remains limited in stakeholder engagement and public communication. These findings echo the literature's emphasis that active collaboration across government, non-government, and community sectors—combined with effective communication—is vital for improving preparedness and ensuring sustainable communicable disease control (WHO, 2022; Rosen et al., 2019; Wensing et al., 2020).

Conclusions

This study examined the preventive health measure practices of Barangay Health Workers (BHWs) in four selected barangays of Cainta—San Andres, Sto. Domingo, San Isidro, and San Juan—against COVID-19, tuberculosis, and measles from 2023 to 2024. Findings revealed that while all barangays implemented preventive measures, the extent of practice varied across diseases and communities. Significant differences were observed in the implementation of preventive health practices, reflecting the diverse capacities and challenges faced at the grassroots level. Control mechanisms—including prevention, detection, response, and public health service delivery—were present in all barangays, yet gaps persisted that limited their effectiveness. Common barriers, including resource constraints, uneven compliance, and systemic limitations, hindered the full realization of effective disease control at the community level. The study affirms the vital role of BHWs as frontline actors in safeguarding community health; however, the

variations and barriers identified emphasize the need for stronger institutional support, standardized practices, and enhanced capacity-building programs. To address these gaps, six recommendations are proposed: (1) BHWs should conduct periodic assessments to identify weak areas in disease control; (2) preventive programs should be standardized across barangays to ensure consistency; (3) inter-barangay collaboration should be promoted to share best practices and resources; (4) partnerships with local government units, NGOs, and private entities should be strengthened to mobilize resources and expand health education; (5) training and capacity-building for BHWs should be enhanced to improve effectiveness in surveillance and community engagement; and (6) future research should broaden the scope to include additional barangays and communicable diseases such as hepatitis, influenza, and dengue fever. Strengthening the role of BHWs within the local health system is crucial for ensuring community resilience against both recurring outbreaks and emerging threats to communicable diseases.

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Affiliations and Corresponding Information

Aljon Peter L. Temporal
Rizal Technological University – Philippines

Dr. Helen Mercedes C. Asturias
Rizal Technological University – Philippines