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Perceived Effectiveness of Barangay Health Centers in Selected Barangays of Davao City: An Assessments of Accessibility, Quality And Community Satisfaction

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Abstract

This study assessed the perceived effectiveness of Barangay Health Centers (BHCs) in selected barangays of Davao City by examining accessibility, quality of healthcare services, and community satisfaction. Anchored on Andersen's Behavioral Model of Health Services Use and Donabedian's Framework for Healthcare Quality, the research employed a descriptive-quantitative design. Data were collected from 398 respondents across ten barangays using a validated survey questionnaire, with reliability confirmed through Cronbach's alpha (≥ 0.70). Descriptive statistics and Spearman's rho correlation were utilized to analyze the data. Findings revealed that accessibility indicators such as proximity and transportation were rated neutral, while emergency services were perceived as inadequate. The quality of healthcare services was generally rated as fair, with concerns on the availability of medicines and supplies. Community satisfaction was also moderate, particularly in terms of staff responsiveness, communication, and professionalism. Overall perceived effectiveness was rated neutral (mean = 3.16), indicating the need for service improvements. Correlation analysis showed significant positive relationships between quality of healthcare services and perceived effectiveness ($rs = 0.539$, $p < 0.001$), and between community satisfaction and perceived effectiveness ($rs = 0.712$, $p < 0.001$), leading to the rejection of the null hypotheses. The study concludes that improving medicine availability, extending service hours, and enhancing staff responsiveness are critical to increasing effectiveness and community trust. These findings align with Sustainable Development Goal (SDG) 3 (Good Health and Well-being) and SDG 11 (Sustainable Cities and Communities), emphasizing equitable access to quality healthcare at the community level. The sustainability impact of the study lies in its contribution to evidence-based policymaking, improved local health governance, and strengthened primary healthcare systems that promote inclusive and resilient community health services.

Keywords: Accessibility; Barangay Health Centers; Community Satisfaction; Davao City; Perceived Effectiveness; Quality of Healthcare Services

1. Introduction

Barangay Health Centers (BHCs) are fundamental to the Philippine healthcare system, delivering essential services such as maternal care, immunization, and treatment of common illnesses (World Health Organization [WHO], 2021). Their effectiveness is shaped by accessibility, quality of services, and community satisfaction (Calleja et al., 2023). Accessibility includes proximity, transportation, operating hours, and waiting time (Garcia & Cruz, 2022), while quality involves staff competence, availability of medicines, and service efficiency (Lagrada, 2020). Community satisfaction reflects the extent to which services meet public expectations (Domingo et al., 2023; Cabrera & Salazar, 2022). In Davao City, disparities in service delivery persist despite ongoing healthcare reforms. Reports of long waiting times, limited resources, and inadequate responsiveness highlight gaps in service effectiveness (Abing & Ladori, 2023; De Guzman & Manalaysay, 2024). These challenges necessitate a systematic assessment of BHC performance to improve healthcare access and equity. Literature consistently identifies accessibility, quality, and satisfaction as key determinants of healthcare effectiveness. Accessibility barriers such as distance, cost, and limited clinic hours hinder service utilization (Peters et al., 2008; De Guzman & Manalaysay, 2024). Geographic inequalities, including uneven distribution of health centers, further limit access (Silva & Johnson, 2009). Quality of care is influenced by infrastructure, staffing, and availability of medical supplies (Donabedian, 1988; Aquino & De Castro, 2021). Resource shortages and workforce limitations reduce service efficiency and patient outcomes (Abing & Ladori, 2023; Tan & Del Mundo, 2024). Community satisfaction is shaped by interpersonal factors such as communication, responsiveness, and empathy (Roxas, 2012; Gabrani, Schindler, & Wyss, 2023). Studies emphasize that patient experience often outweighs technical service availability in determining perceived effectiveness (Jumao-as & Gabuya, 2023). Overall, literature highlights that healthcare effectiveness is multidimensional, requiring integration of structural, operational, and experiential factors.

In the Philippines, healthcare delivery is decentralized, with BHCs serving as primary access points (Dayrit et al., 2018). However, disparities persist across regions due to uneven resource allocation and infrastructure limitations (Santos & Villanueva, 2019). In Davao City, urban concentration of facilities leaves peripheral barangays underserved (Silva & Johnson, 2009), while disruptions during health emergencies have reduced service utilization and trust (USAID Philippines, 2021). Globally, similar challenges are observed in low- and middle-income countries, where poverty, geography, and system inefficiencies hinder healthcare access (Berman & Khan, 2011; Chowdhury & Khan, 2016). Strong primary healthcare systems are associated with better outcomes, equity, and cost efficiency (Starfield, Shi, & Macinko, 2005). These parallels highlight the need for localized assessments aligned with broader global health priorities. This study is grounded in Andersen's Behavioral Model of Health Services Use (Andersen, 1995) and Donabedian's Framework for Healthcare Quality (Donabedian, 1988). Andersen's model explains healthcare utilization through predisposing (demographics), enabling (resources and access), and need factors, emphasizing how socio-economic and structural conditions influence service use (Babitsch et al., 2012). Donabedian's framework evaluates healthcare quality through structure (resources and facilities), process (service delivery), and outcomes (patient satisfaction and effectiveness). These frameworks collectively provide a comprehensive lens for analyzing both individual behavior and system performance in assessing BHC effectiveness.

Existing studies on BHCs primarily focus on rural or national-level assessments, with limited localized research in urban settings like Davao City (Garcia & Cruz, 2022; Calleja et al., 2023). Many studies emphasize infrastructure and service delivery but overlook community perceptions and satisfaction as critical indicators of effectiveness. Furthermore, few studies integrate accessibility, quality, and satisfaction within a unified framework, and demographic variations in perception remain underexplored (Domingo et al., 2023). The relationship between these dimensions and overall effectiveness is also insufficiently examined. This study addresses these gaps by providing a comprehensive, community-centered evaluation of BHCs in selected barangays of Davao City, offering insights for improving healthcare delivery and policy formulation.

This study aligns with several Sustainable Development Goals (SDGs), particularly:
SDG 3 – Good Health and Well-Being: By evaluating primary healthcare accessibility and quality, the study contributes to improving health outcomes and strengthening local health systems.
SDG 10 – Reduced Inequalities: It addresses disparities in healthcare access across urban and semi-rural barangays.
SDG 11 – Sustainable Cities and Communities: Enhancing barangay-level healthcare supports inclusive and resilient urban communities.
SDG 16 – Peace, Justice, and Strong Institutions: The study promotes accountability and evidence-based governance in public health service delivery.

This research contributes to multiple dimensions of sustainability. It supports public health sustainability by improving access to essential services and promoting preventive care. It advances socio-economic sustainability by addressing healthcare inequities among low-income populations. The study also contributes to policy and governance sustainability by providing data-driven insights for local government decision-making and resource allocation. Additionally, it supports community sustainability by strengthening trust and engagement between residents and healthcare providers. By integrating accessibility, quality, and satisfaction, the study promotes a holistic approach to sustainable healthcare systems that are responsive, equitable, and community-centered.

2. Material and methods

2.1 Research Design

The study utilized a descriptive-quantitative research design to systematically assess respondents' perceptions of accessibility, service quality, community satisfaction, and overall effectiveness of BHCs. This design enabled the collection of measurable data and facilitated statistical analysis to identify patterns and relationships among variables without manipulating the study environment (Creswell & Creswell, 2018). A structured questionnaire using Likert scales was employed to quantify perceptions across key indicators.

2.2 Locale of the Study

The research was conducted in Davao City, a highly urbanized area in the Philippines characterized by diverse socio-economic and geographic conditions. Ten barangays were purposively selected to represent both urban and semi-rural contexts: Magtuod, Maa, Langub, Matina Pangi, Matina Crossing, Carmen, Callawa, Bago Oshiro, Matina Aplaya, and Baganihan. Selection was based on factors such as population size, accessibility, and presence of health centers to ensure a comprehensive representation of different community settings (Chowdhury & Khan, 2016).

2.3 Respondents of the Study

The respondents were residents aged 18 years and above from the selected barangays who had availed of services from their respective Barangay Health Centers. They represented diverse demographic backgrounds in terms of age, gender, educational attainment, occupation, income, and frequency of visits, allowing for a broad assessment of perceptions across population groups.

2.4 Sample and Sampling Procedure

The study applied proportionate stratified sampling to ensure fair representation from each barangay based on population size. Using Slovin's formula with a 5% margin of error, a total sample of 398 respondents was determined from a population of 186,149. Sample allocation per barangay was proportionate to its population, enhancing representativeness and reducing sampling bias (Creswell & Creswell, 2018).

2.5 Research Instrument

A structured survey questionnaire was used as the primary data collection tool. It measured accessibility, quality of healthcare services, and community satisfaction using a 5-point Likert scale, while overall effectiveness was assessed using a 10-point scale. The instrument also gathered demographic data. It was developed based on relevant literature and translated into Bisaya for better comprehension. A pilot test involving 40 participants was conducted to assess clarity and reliability. The instrument achieved a Cronbach's alpha of 0.70 or higher, indicating acceptable internal consistency (Tavakol & Dennick, 2011).

2.6 Data Gathering Procedure

Data collection involved administering the validated questionnaire to selected respondents across the ten barangays. Prior to full deployment, a pilot test was conducted to refine the instrument. Respondents were informed of the study's purpose and were asked to provide responses based on their experiences with BHC services. The process ensured that data collected were accurate, relevant, and reflective of actual community perceptions.

2.7 Data Analysis Techniques

Both descriptive and inferential statistics were used to analyze the data using IBM SPSS. Descriptive statistics such as frequency, percentage, mean, median, and standard deviation were used to summarize demographic data and perception scores. Due to non-normal data distribution, non-parametric tests were applied. The Wilcoxon Signed-Rank Test was used to assess differences from neutral responses, while the Mann-Whitney U and Kruskal-Wallis tests were used for group comparisons. Spearman's rank correlation was employed to determine relationships between variables such as service quality, community satisfaction, and perceived effectiveness.

3. Results and Discussion

3.1 Accessibility of Barangay Health Center Services

3.1.1 Proximity to Health Centers

Respondents reported a neutral perception of proximity, with mean scores indicating that they neither strongly agreed nor disagreed that health centers were easily reachable. Variability in responses suggests differing experiences, where some found access convenient while others encountered difficulties due to location or distance. This finding suggests that while Barangay Health Centers are physically present, accessibility is inconsistent. This aligns with Bolongaita and Nicodemus (2023), who highlighted geographic barriers affecting access, as well as Silva and Johnson (2009), who emphasized the importance of optimal facility placement. Similarly, Peters et al. (2008) noted that perceived distance significantly influences healthcare-seeking behavior, particularly among low-income populations.

3.1.2 Transportation Availability

Transportation availability and affordability were also rated neutral, indicating that respondents were uncertain about the ease of reaching health centers using available transport options. While costs were somewhat manageable, access to transportation remained inconsistent. This neutrality reflects infrastructural and economic limitations within communities. Limited transport options, especially in remote areas, may delay access to care, reinforcing accessibility challenges despite physical proximity.

3.2 Quality of Healthcare Services

3.2.1 Overall Service Quality

Respondents rated healthcare service quality as generally fair, with acceptable scores in staff competence, efficiency, and service range. However, the availability of medicines and supplies was rated poor, while cleanliness and safety showed mixed results. These results indicate that while basic services are delivered, inconsistencies in resources limit overall quality. This aligns with De Guzman & Manalaysay (2024) and Aquino & De Castro (2021), who identified persistent shortages in supplies as a major constraint in primary healthcare delivery.

3.2.2 Responsiveness of Services

Respondents expressed a neutral perception of responsiveness, suggesting that while individual interactions with health workers may be adequate, broader system responsiveness remains limited. This supports Donabedian (1988), who emphasized responsiveness as a key dimension of quality care, and Bolongaita and Nicodemus (2023), who attributed responsiveness issues to structural constraints such as underfunding and lack of supplies. These factors contribute to delays and reduced service efficiency.

3.2.3 Communication and Patient Care

Communication and patient care were rated neutral, indicating uncertainty regarding clarity of explanations and the level of care provided by health personnel. This suggests gaps in patient-provider interaction. Donabedian (1988) emphasized that clear communication directly affects patient outcomes, while Pineda and Quezon (2016) reported confusion due to medical jargon. Gabrani et al. (2023) and Abacan and Gonzales (2023) further noted that limited engagement and resource constraints hinder patient-centered communication.

3.3 Community Satisfaction

3.3.1 Overall Satisfaction

Community satisfaction across staff professionalism, responsiveness, communication, and overall experience was rated neutral, indicating that respondents were neither satisfied nor dissatisfied with services. This neutrality reflects moderate service performance. Jumao-as and Gabuya (2023) similarly found that satisfaction in barangay health settings remains acceptable but limited by interpersonal and service delivery gaps.

3.3.2 Overall Service Experience

The overall service experience was also rated neutral, showing that while basic expectations are met, services do not exceed community expectations. This finding aligns with Roxas (2012) and Gabrani, Schindler, & Wyss (2023), who noted that neutral satisfaction reflects inconsistent service quality and tentative trust. Pineda & Quezon (2016) further observed that improvements in single service areas are insufficient without holistic enhancement.

3.4 Perceived Effectiveness of Barangay Health Centers

Respondents rated overall effectiveness as neutral, indicating that while health centers fulfill basic functions, they are not perceived as fully effective in addressing broader community health needs. This supports Starfield et al. (2005), who emphasized that primary healthcare effectiveness is often constrained by systemic limitations despite infrastructure presence.

3.5 Relationship Between Variables

3.5.1 Quality of Healthcare Services and Perceived Effectiveness

Results showed a significant moderate positive relationship between service quality and perceived effectiveness ($r_s = .539$, $p < .001$), indicating that improvements in quality are associated with higher perceived effectiveness. This finding supports Aquino & De Castro (2021) and Donabedian (1988), who emphasized that quality care directly influences service evaluation. Abacan & Gonzales (2023) and Starfield et al. (2005) further highlighted that competent staff and adequate resources enhance trust and perceived effectiveness.

3.5.2 Community Satisfaction and Perceived Effectiveness

A strong positive relationship was found between community satisfaction and perceived effectiveness ($r_s = .712$, $p < .001$), indicating that higher satisfaction significantly increases perceived effectiveness. This aligns with Jumao-as and Gabuya (2023) and Pineda and Quezon (2016), who identified satisfaction as a key determinant of service perception. Donabedian (1988), Starfield et al. (2005), and De Guzman and Manalaysay (2024) further emphasized that trust, responsiveness, and professional conduct shape overall effectiveness.

4. Conclusion & Recommendations

The study found that respondents, primarily economically vulnerable individuals, perceived the accessibility, quality of healthcare services, and community satisfaction of Barangay Health Centers as generally neutral to fair, with notable concerns in emergency services, medicine availability, and service consistency. Overall perceived effectiveness was also rated neutral, indicating that while basic services are provided, they do not fully meet community expectations. Statistical analysis revealed significant positive relationships between quality of healthcare services ($r_s = .539$, $p < .001$) and perceived effectiveness, as well as between community satisfaction ($r_s = .712$, $p < .001$) and perceived effectiveness, confirming that improvements in service quality and patient satisfaction directly enhance perceived effectiveness (Donabedian, 1988; Starfield et al., 2005; Gabrani et al., 2023; De Guzman & Manalaysay, 2024).

The study recommends strengthening the consistent availability of medicines and supplies through improved procurement and inventory systems, enhancing accessibility by addressing transportation and scheduling limitations, and improving human resource capacity through continuous training focused on both technical and interpersonal skills (Aquino & De Castro, 2021; Bolongaita & Nicodemus, 2023; Tan & Del Mundo, 2024). It further suggests improving emergency service preparedness through established protocols and referral systems, and implementing structured feedback mechanisms to capture community concerns and guide service improvements (Kruk et al., 2016; Abacan & Gonzales, 2023). These actions are intended to address identified service gaps and improve overall effectiveness and community trust in Barangay Health Centers.

Compliance with ethical standards

The authors declare no conflict of interest. This study complied with recognized ethical standards for human-participant research by ensuring voluntary participation with informed consent, the right to withdraw without penalty, and strict confidentiality through anonymous, secure, and aggregated data handling. Given the focus on psychological well-being, procedures were non-invasive, and safeguards were observed to minimize discomfort, with guidance to appropriate support services when needed, and required institutional permissions were secured for instrument use and access to academic records.

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