Factors associated with the continuum of maternal healthcare among young Filipino mothers: Regional disparities in the achievement of the demographic dividend

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Introduction

The Philippine government has identified the optimization of the demographic dividend as a critical strategy for achieving sustained economic growth. This dividend refers to the economic gains that can arise when a larger share of the population is of working age, thereby supporting fewer dependents. Successfully harnessing this demographic opportunity can lead to improved population well-being, including gains in maternal health. Although the Philippines has made considerable progress in reducing fertility and child mortality, maternal mortality remains a persistent concern. Between 2016 and 2022, the maternal mortality ratio (MMR) increased from 94 to 108 deaths per 100,000 live births, surpassing the Sustainable Development Goal (SDG) target of 70 (National Economic and Development Authority, 2022).

Readiness to reap the demographic dividend, however, is uneven across Philippine regions, as reflected in regional support ratios. This indicator, which incorporates both age structure and lifecycle patterns of economic production and consumption (Mason et al., 2017), highlights disparities in demographic potential. These disparities are mirrored in the uneven utilization of maternal healthcare services across regions. While areas such as the National Capital Region (NCR), CALABARZON, and the Cordillera Administrative Region (CAR) exhibit greater readiness, the Bangsamoro Autonomous Region in Muslim Mindanao (BARMM) continues to lag in both demographic transition and maternal health service uptake. For example, only 28% of women aged 15–49 in BARMM complete the recommended minimum of four antenatal care (ANC) visits, and merely 36% of young mothers give birth in health facilities, figures significantly below national averages (PSA & ICF, 2023; Cruz & Chico, 2024).

Young mothers aged 15–24 years represent a particularly vulnerable group in maternal health. They face heightened medical risks as well as socioeconomic and cultural barriers that hinder access to essential services. Globally, complications from pregnancy and childbirth remain the leading causes of death among adolescents, highlighting the need for focused interventions. Maternal healthcare spans the pregnancy, childbirth, and postpartum periods, with ANC, facility-based delivery (FBD), and postnatal care (PNC) forming the core components. In the Philippines, however, utilization of these services remains suboptimal. Factors such as education, income, religion, age, media exposure, past pregnancy experiences, and geographic isolation shape access and uptake, with logistical and infrastructural barriers compounding the issue in geographically isolated areas.

One of the most effective strategies to improve maternal and neonatal health outcomes is the continuum of care approach. This strategy emphasizes seamless healthcare provisions throughout pregnancy, childbirth, and the postpartum period. Yet, cross-country studies estimate that only 47% to 70% of Filipino women in the reproductive ages 15 to 49 complete the maternal health continuum. These estimates underscore the insufficient utilization of maternal healthcare services in the Philippines and the need for research focusing on maternal health service utilization among the younger segments of the population who face unique barriers to accessing these services.

Addressing this research gap, the present study examines maternal healthcare service use among young Filipino mothers within the continuum-of-care framework and in the broader context of demographic dividend readiness. The study aims to inform region-specific, youth-sensitive interventions

that can improve maternal health outcomes and enhance the country's potential to realize the demographic dividend. Specifically, it seeks to: (1) compare the sociodemographic, economic, and fertility- and health-related characteristics of mothers aged 15–24 and their live births across support ratio groups; (2) assess maternal healthcare utilization and continuum completion among these mothers by support ratio group; and (3) examine the associated factors influencing continuum completion across these groups.

Data and methods

The study draws on data from the 2021 Young Adult Fertility and Sexuality Survey (YAFS5), the fifth iteration of a series of nationally and regionally representative surveys of Filipino youth conducted by the University of the Philippines Population Institute and the Demographic Research and Development Foundation. YAFS5 collected information from 10,949 respondents aged 15–24 (5,342 males and 5,602 females). For this analysis, the sample was limited to 1,279 live births reported by 949 female respondents.

To assess regional variations in maternal healthcare utilization, the study classified women according to the support ratio level (SRL) of their region of residence. The study adopts the regional classification developed by Afable (2024), which categorizes the Philippines' 17 regions into four groups: (1) High SRL (n = 167) includes only NCR which is considered ready to reap benefits from the demographic dividend; (2) Medium SRL (n = 311) which comprises CAR, Central Luzon, and CALABARZON; (3) Low SRL (n = 691) includes 12 regions, namely, Ilocos Region, Cagayan Valley, MIMAROPA, Bicol, Western Visayas, Central Visayas, Eastern Visayas, Western Mindanao, Northern Mindanao, Davao Region, SOCCSKSARGEN, and CARAGA; and (4) Very Low SRL (n = 110) which is considered lagging in demographic dividend readiness consists solely of BARMM.

The analysis focused on eight maternal healthcare indicators across the continuum of care. For ANC and PNC, three indicators were assessed: timing of first visit, number of visits, and type of provider. Delivery indicators included place of birth and presence of a skilled birth attendant. Completion of the maternal healthcare continuum was defined as receiving at least four ANC visits, skilled birth attendance, and a postnatal check-up by a health professional.

Independent variables were grouped into three categories: sociodemographic (e.g., mother's age at birth, marital status at pregnancy, education, religion, urban exposure, internet access, household size, self-efficacy), economic (e.g., wealth status, employment, access to health insurance), and fertility- and health-related (e.g., pregnancy order and intention, experience of pregnancy and birth complications, mother's self-rated health status, and health-risk practices such as smoking).

Descriptive statistics summarized sample characteristics and service utilization. Dropout rates at each stage of the continuum were calculated. To identify factors associated with completion of maternal healthcare, three sequential binary logistic regression models were developed, with separate analyses for each SRL group and the total sample. Model 1 identified the factors associated with completing at least four ANC visits compared to having fewer than four. Model 2 focused on the factors associated with completing both the recommended minimum of four ANC visits and delivery assisted by skilled birth attendants. Model 3 examined the completion of the full continuum of maternal healthcare, differentiating women who had at least four ANC visits, delivery attended by a skilled birth attendant, and a post-natal checkup by a skilled health professional. Adjusted odds ratios (ORs) with 95% confidence intervals were reported. Model fit assessment and multicollinearity diagnostics were conducted. All analyses used sampling weights that accounted for the complex survey design.

Results

The results reveal significant disparities in maternal healthcare utilization across SRL groups. Among the eight indicators examined, only facility-based delivery (FBD) and receipt of PNC from a health professional showed a consistent gradient, improving as SRL increased. For example, 94% of mothers in NCR (High SRL) gave birth in health facilities, compared to just 36% in BARMM (Very low SRL). Similarly, PNC from a skilled provider was reported by 80% of mothers in NCR versus 37% in BARMM.

Overall, NCR led in six out of eight indicators, while BARMM consistently ranked lowest in seven. The most poorly performing indicator nationwide was receiving at least four PNC visits, with only 15% of mothers achieving this. Interestingly, PNC within 24 hours of delivery did not show substantial variation across SRLs, suggesting that certain components of care are more uniformly accessed than others.

Completion of the maternal healthcare continuum was observed in only half of the sample. The most pronounced dropouts occurred during the ANC stage, particularly in BARMM, where more than half of the women failed to meet the four-visit threshold. In contrast, PNC dropouts were less severe in BARMM, suggesting different dynamics at play. Completion rates were highest in NCR (71%) and lowest in BARMM (21%), with Medium and Low SRLs showing no clear patterns, reflecting the complexity of regional transitions.

Regression analyses revealed that the factors associated with maternal healthcare utilization varied by SRL. For ANC compliance (Model 1), maternal age, internet access, self-efficacy, employment, health insurance, and pregnancy order were significant predictors. These patterns, however, differed across regions. In NCR, sociodemographic factors played a larger role, while in Medium and Low SRLs, economic and fertility-related factors were more influential. Counterintuitively, higher education was negatively associated with ANC compliance in NCR.

Model 2, which examined combined ANC and SBA compliance, found positive associations with age, Catholic affiliation, and internet access across regions. Marital status and religion had strong effects in NCR, while self-rated health was influential in BARMM. In Medium and Low SRLs, health insurance and self-efficacy emerged as key determinants.

In the full continuum model (Model 3), being Catholic, having higher self-efficacy, access to health insurance, and being in a first pregnancy were positively associated with completion. In BARMM, good self-rated health and first-order pregnancies significantly increased the odds of completion. Conversely, involvement in housework lowered the likelihood of completion in BARMM. Complications during pregnancy or childbirth were associated with greater completion odds in Low SRLs, while in NCR, younger age and intended pregnancies were positively linked with continuum completion.

Conclusions and implications

The findings underscore critical gaps in maternal healthcare utilization among young Filipino mothers and highlight persistent regional disparities. Completion of the full maternal health continuum remains low overall, with NCR achieving the highest rates and BARMM trailing significantly. The largest dropouts occur at the ANC stage, indicating the need for stronger retention strategies early in the continuum. Expanding outreach, providing incentives such as conditional cash transfers, and instituting robust monitoring mechanisms to track continuum completion can help address these gaps.

Improving ANC accessibility is particularly vital. Ensuring that young mothers attend at least four ANC visits increases their likelihood of completing the continuum. Addressing financial and logistical barriers, such as transportation, can help ensure more young mothers begin and sustain ANC attendance. The findings also emphasize the urgent need for targeted interventions in BARMM, which consistently shows the lowest levels of maternal healthcare utilization. Approaches in BARMM must be culturally

sensitive, geographically accessible, and affordable, with added focus on expanding health insurance access and strengthening preventive healthcare, particularly for mothers in good self-reported health.

Teenage mothers require special attention, as a younger age is associated with lower ANC compliance even in high-performing regions. Programs tailored to their specific needs, including adolescent-friendly health services, could help address this vulnerability. At the same time, successful models from NCR, such as mobile clinics and maternal health hubs, can be adapted for use in lower-performing regions.

Empowering young mothers through digital tools and improved self-efficacy is another important strategy. Peer networks, workshops, and digital platforms offering teleconsultations and health information can extend service reach. The strong link between internet access and service utilization highlights the role of digital tools in extending maternal health services.

Finally, continued investment in maternal health research is crucial. Further analysis of regional disparities—particularly regarding systemic and cultural barriers—will help tailor interventions. Unexpected findings, such as the inverse relationship between education and ANC compliance in NCR, the influence of Catholicism, and the impact of self-rated health in BARMM, merit qualitative follow-up. These insights can inform national surveys and program design, ensuring more nuanced, evidence-based responses.

Achieving the demographic dividend hinges on the health and well-being of the working-age population, which includes maternal health outcomes. By addressing these challenges through region-specific and youth-sensitive strategies, the Philippines can ensure equitable access to maternal healthcare, foster a healthier and more productive population, and accelerate national and regional development.

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