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Spatial variation and determinants of skilled birth attendant delivery among women of reproductive age in Ethiopia: A spatial and multilevel analysis

Abstract:

Background: Delivery assisted by skilled birth attendants is essential for maternal and new-born health because most maternal and infant deaths occur during childbirth. Ethiopia continues to use skilled birth care services that are far below acceptable standards. There are also regional variations in skilled birth attendant delivery services in the country. Therefore, this study explored the spatial distribution and factors associated with the use of skilled birth attendants in Ethiopia based on nationally representative EMDHS 2019 data.

Methods: This study included a weighted sample of 5,527 women who had given birth within the 5 years prior to the survey year. ArcGIS version 10.7 was used to visualize the geographic variations, and Kulldorff's SaTScan version 9.6 was used to identify significant purely spatial clusters. A multilevel mixed-effects logistic regression model was fitted to identify determinant factors of skilled birth attendant delivery using STATA 17.

Results: The number of women who delivered with the assistance of skilled birth attendants was 2,740 (49.6%) and distributed non-randomly across the regions of the country. Low clustering of skilled birth attendant delivery was detected in the Afar, Amhara, Benshangul-Gumuz, Gambela, Oromia, and Somali regions, whereas high clustering was detected in the Addis Ababa, Dire Dawa, and Harari regions. Maternal education level, parity, wealth index, region, place of residence, and community poverty level were significant predictors of skilled birth attendant delivery.

Conclusion and recommendation: Skilled birth-assisted delivery remains below national and international acceptable standards and is associated with geographic variation across the country. If it continues at the current pace, it will be difficult to achieve national and international targets. Therefore, a geographic-specific intervention should be launched by the government and respective local administrators, supported by local research in regions with low-skilled birth attendant delivery, to tackle individual and aggregate community-level determinants.

Biography

Yibeltal Addis Mekuria has a Bachelor of Science in Health Informatics from the University of Gondar and a Master of Public Health in Health Informatics from Bahir Dar University. With a strong public health background, he is passionate about integrating technology into healthcare systems to improve healthcare outcomes and service delivery. His efforts have resulted in published papers and have contributed to advancing knowledge in the field. He is dedicated to continuous learning and always seeks opportunities to expand his knowledge and contribute to improving healthcare. Looking ahead, he aspires to continue advancing in the field of health informatics by researching new technologies and methodologies that can further enhance **healthcare outcomes, education, and research.**