



Horizontal Equity in the Use of Maternal Health Services in Cameroon

Saleu Feumeni Josiane

November 2023 / No.827

Abstract

An equitable healthcare system should be the health policy goal of all countries. The objective of this study is to measure horizontal equity in the use of maternal health services in Cameroon from 2004 to 2018. Specifically, it aims to determine the level of inequity in assistance during delivery and in the intake of tetanus vaccine from 2004 to 2018. It identifies sources of inequity in assistance during delivery and at the intake of tetanus vaccine. To accomplish this, we used the indirect standardization of health care method and the 2004, 2011, and 2018 Demographic and Health Surveys. The results show that there are significant

inequities in wealth, education, region of residence, and in access to the nearest health facilities. Furthermore, sociodemographic and economic inequities are associated with health care utilization inequities. A health policy implementation monitoring team is therefore essential if the observed inequities in the use of maternal health services in Cameroon are to be significantly reduced.

Introduction

An equitable healthcare system is the health policy objective of most governments in both developed and developing countries. The crucial objectives of health system reforms are usually a means to achieve a level of equity and to equalize the system of health service utilization (Özsoy & Alcan, 2017). According to Whitehead and Dahlgren (2006), equity in health involves the equitable distribution of resources needed at health care, coupled with equitable access to opportunities and support in the event of illness; whereas health inequity occurs when the social, economic, demographic, or geographical aspects that characterize health differences between population groups are unjust and avoidable (Whitehead & Dahlgren, 2006). The health status of individuals is important for productivity and economic growth. Maternal health, most especially, is important because of its impact on mortality rates, family, poverty, and maternal labour supply decisions. Maternal health status is an indicator of the level of health development as well as an indicator of health system performance. Maternal health care corresponds to the health care of women of reproductive age (15–49 years). It includes several dimensions: preconception, conception, and family planning used to reduce maternal and neonatal mortality.

Inequity in the utilization of maternal and reproductive health services leads to poor reproductive and maternal health outcomes. One of the most serious consequences is maternal mortality. They can lead to other serious health problems, such as postpartum depression, premature birth, low birth weight, and infant mortality. These problems can have serious consequences for both mother and child, including physical, mental, and emotional health problems (Gandhi *et al.*, 2022). Maternal and reproductive health issues are also a priority for the Sustainable Development Goals (SDGs), which focus on equity. SDG 3 calls for ensuring healthy lives and promoting wellbeing for all. The maternal and reproductive health objectives for 2030 encompass the following: (i) decreasing the worldwide maternal mortality ratio to less than 70 per 100,000 live births; (ii) guaranteeing universal availability of sexual and reproductive health care services; (iii) eradicating avoidable infant deaths, with all countries striving to decrease neonatal mortality to a maximum of 12 per 1,000 live births.

Globally, approximately 830 women die every day due to complications during pregnancy or childbirth in 2015 according to the World Health Organization. Target 3.1 of the Sustainable Development Goals (SDGs) would reduce the global maternal

mortality ratio from 216 per 100,000 live births in 2015 to less than 70 per 100,000 live births by 2030. This will require achieving an overall annual rate of reduction of at least 7.5% (Alkema *et al.*, 2016). Women's deaths occur as a result of complications during or after pregnancy or childbirth that can be prevented or treated. Other complications that existed before becoming worse at this time, especially if not addressed in a care package.

The main complications, which account for 75% of all maternal deaths include: severe haemorrhage (mostly after delivery); infections (usually after delivery); hypertension during pregnancy (pre-eclampsia and eclampsia); complications from delivery; and unsafe abortion (Alkema *et al.*, 2016). These complications can be better managed if the maternal health professional attending the delivery is skilled. In 2016, millions of births worldwide were not attended by a skilled midwife, doctor or nurse, with only 78% of births attended by a skilled birth attendant (World Health Organization [WHO], 2017). Live births in the five years prior to the survey, 69% were attended by a trained health provider: 16% by a doctor and 53% by a nurse, midwife, or health worker. One in ten (10%) of births were assisted by a traditional birth attendant, and 3% of births were not assisted at all (National Institute of Statistics [NIS] & ICF International, 2020).

To reduce neonatal mortality, it is important that the mother during pregnancy receives multiple doses of tetanus vaccine. Tetanus vaccination during pregnancy is one of the essential interventions recommended by maternal and child health programmes to improve the chances of survival for women and their newborns (National Institute of Statistics [NIS] & ICF International, 2020). Tetanus vaccination is one of the important components of maternal health (WHO, 2017). It is the most effective intervention against neonatal tetanus. It is independent of all other protective approaches, which include hospital care and delivery by trained health professionals (Moniz & Beigi, 2014).

Immunization of pregnant women of childbearing age with two doses of tetanus toxoid vaccine can reduce the risk of infection and neonatal mortality from tetanus. United Nations Children's Fund (UNICEF) and United Nations Population Fund (UNFPA) believe that it is important to give at least two doses of tetanus vaccine to all pregnant women and three doses to all women of childbearing age. Effective surveillance for maternal and neonatal tetanus should be ensured. In most developing countries, the tetanus vaccination programme is implemented as part of the routine immunization programme (Khan & Raza, 2013). It is, therefore, crucial to improve the use of maternal health services and women's access to quality care before, during, and after delivery.

Studies focusing on individual health in general and maternal health in particular in Cameroon have been interested in analysing the determinants of the uses and access to health services (Ndonou, 2016; Tambi, 2015; Saleu, 2020). Inequalities in terms of access and use have hardly been analysed, but not geographical and economic barriers that explain consumers' preferences to seek unskilled care. The relationship between

inequalities and needs has not been established. Although measures such as the sectoral health strategy (2016–2027), the national strategic plan for reproductive health, the CARMMA plan, and the Cheque Santé programme have been developed, it turns out that access to and use of maternal health services are no longer a constraint for certain segment of the population but have certainly made it possible to appreciate changes, but they are still far from the targets expected to bring about a significant reduction in maternal mortality, and consequently have lasting impact on development.

Research on this is therefore very relevant in a country like Cameroon, where regions are not equally endowed with health infrastructure and income. It will be an important contribution because many existing articles already analyse the horizontal equity of maternal health service utilization in Cameroon for a specific year, but they have not examined the development over longer periods. The main objective of this study is to measure horizontal equity in the use of maternal health services in Cameroon from 2004 to 2018. More specifically, it aims at determining the level of inequity in the use of maternal health services in Cameroon, and to identify the sources of inequity in the use of maternal health care services in Cameroon from 2004 to 2018.

Overview of the use of maternal health services in Cameroon

The use of maternal health services in Cameroon is a major challenge for the achievement of the Sustainable Development Goals (SDGs). Maternal health topics remain a priority for the post-2015 Sustainable Development Goals (SDGs) (Alkema *et al.*, 2016). Unlike the Millennium Development Goals (MDGs), which paid insufficient attention to equity, the SDGs place a strong emphasis on equity. MDG 3 calls for healthy lives and wellbeing for all, while MDG 10 calls for reducing inequalities within and between countries to promote inclusion and empowerment for all (Tangcharoensathien *et al.*, 2015). Countries commit to achieving the SDGs with every individual in mind. The issue of maternal health is the first target of the MDG number 3. Several programmes have been set up by the Cameroonian Government, such as the National Multisectoral Programme for the fight against maternal and infant mortality in Cameroon, the 2016–2027 Health Sector Strategy, just to name a few, with the aim of evaluating public policies on maternal health. These programmes, as a whole, aim to improve the supply and quality of health care, facilitate access to health services for the poor and align with the Sustainable Development Goals by accelerating the implementation of universal health coverage (Ministry of Health, 2015).

In Cameroon, the achievement of public health policies requires the identification of factors that influence the use of health services. It is observed that the level of use of maternal health services has declined. Indeed, assisted delivery by trained personnel is one of the four pillars of maternal mortality reduction. Only 67% of births took place in a health facility (45% in public facilities remaining the most frequent), and 33% of births

took place at home (National Institute of Statistics [NIS] & ICF International, 2020). Thus, from 1991 to 2004, the percentage of births in a health facility varied irregularly from 62% to 59%. This percentage increased slightly from 2011 to 2018 from 61% to 67% (National Institute of Statistics [NIS] & ICF International, 2020). The maternal mortality rate has fallen from 782 deaths to 467 deaths per 100,000 live births. This rate is still considered high insofar as the SDG target for 2030, which is to achieve a ratio of less than 140 maternal deaths per 100,000 live births, considering the fact that Cameroon achieves an annual reduction rate of about 9.8% (National Institute of Statistics [NIS] & ICF International, 2020).

During the prenatal care, the World Health Organization recommends that, if a woman has received one to four doses of tetanus toxoid-containing vaccine in the past, she should receive a further dose with each subsequent pregnancy up to a total of five doses (five doses protect for the entire childbearing period), and delivery should be assisted by a trained attendant. About 71% of women have received the required doses of tetanus vaccine. The National Institute of Statistics of Cameroon confirms that from 2011 to 2018, the percentage of women who received the tetanus vaccine is most high (73%) on the one hand, and on the other hand 69% of pregnant women were assisted by a trained provider, i.e., 16% by doctors, 33% by midwives and nurses, 10% by traditional birth attendants, and 3% received no assistance (National Institute of Statistics [NIS] & ICF International, 2020).

Theoretical approaches to health equity

This research is based on the theory of social determinants of health. Marmot's theory of social determinants of health argues that social and economic conditions are key drivers of health outcomes and health inequalities (Marmot, 2005). Marmot's theory emphasizes that the conditions in which people are born, grow, live, work, and age are influenced by the distribution of money, power, and resources at global, national, and local levels. This distribution is, in turn, influenced by social and economic policies that also define and influence the social determinants of health.

Social determinants include income, education, ethnicity, gender, housing, and social support. These determinants affect access to and utilization of health services and are often linked to inequities. Health inequities arise from an unequal distribution of these social determinants; this leads to unequal access to necessary resources, and thus to good health. For example, people with lower incomes and education levels are more likely to experience poor health due to limited access to good nutrition, acceptable living environments, and quality health care (Marmot & Wilkinson, 1999).

It is, therefore, important to address the fundamental causes of health inequities through policy measures and improvements in health systems rather than focusing solely on individual behaviour and health care interventions. Policies and practices that promote social justice and equity can improve health outcomes for all individuals, while policies that increase social inequalities can lead to health disparities.

The behavioural model of health care utilization proposed by Andersen (1995) posits that, access to and utilization of health care services is influenced by social determinants of health, which are shaped by societal structures, policies, and practices, and are often linked to inequities in health outcomes. These social determinants can be grouped into three sets: predisposing, enabling, and need factors. (i) Predisposing factors are related to the pre-existing socio-cultural characteristics of individuals, which includes their social structure, before the onset of their illness (education, occupation, ethnicity, social networks, social interactions, and culture), health beliefs (attitudes, values, and knowledge that people have about and towards the healthcare system), and demographics (age and gender). (ii) Enabling factors refer to the logistical aspects of obtaining care. They can be related to personal characteristics (means and skills to access health services, income, health insurance, and quality of social relationships), community (availability of staff and facilities, waiting time), genetic factors, and psychological characteristics. (iii) Need factors refer to the most immediate cause of health service use, starting from the functional and health problems that generate the need for health services that can be perceived or assessed. Perceived needs can assist in comprehending health care seeking behavior and adherence to medical treatment, whereas evaluated needs are more relevant to the type and quantity of treatment offered to a patient following their visit to a healthcare facility.

Data source

Data from the last three Demographic and Health Surveys (DHS) were used in this work: 2004, 2011, and 2018. These samples were designed to estimate a large number of indicators on the situation of children under-5 and women aged 15–49 at the national level. In addition, data disaggregated by quintiles of household socioeconomic wellbeing will allow for the identification of inequalities and the observation of equity issues in social areas in particular. These samples cover all live births that took place in the five years preceding the survey. These surveys are an initiative that has provided recent data, disaggregated by age, gender, and socio-cultural characteristics, to assess progress in implementing strategies and policies, and to report on international goals and commitments. Maternal health service utilization variables will be measured by attendance at delivery and tetanus vaccination. Mothers were asked how many doses of vaccine they received during pregnancy and how much assistance they received during delivery. The latter refers to births where the delivery was assisted by doctors, nurses, and midwives.

Conclusion and policy implications

The objective of this study was to measure horizontal equity in the use of maternal health services in Cameroon. More specifically, it was to determine the level of inequity in the use of maternal health services in Cameroon, and to identify the sources of inequity in the use of maternal health care services in Cameroon. To do this, we used the indirect standardization method. This decomposition method allowed us to identify sources of inequity by including explanatory variables in the model and also to conduct our own analysis of the inequity of maternal health care distribution. We used the 2004, 2011, and 2018 Demographic and Health Surveys as our database. This study shows that the main sources of inequity include level of wealth, level of education, area of residence, region of residence, and access to the nearest health facility. These factors contribute to inequities and have almost equal influence on both delivery assistance and tetanus vaccination. The problem of accessibility is a great risk for women. They are exposed to infectious diseases, prolonged labour, haemorrhage, and death due to complications in childbirth. Another justification is the cost differential. The cost of having a trained health professional to assist you is enormous, especially if you have to do a caesarean section. The inequity is lower for tetanus vaccination than for skilled attendance because of strategies developed by policy makers to encourage women to seek health care during pregnancy. This includes the "health voucher" and "performance-based funding" programmes developed in the northern region, which offer low-cost antenatal and postnatal services.

References

- Alkema, L., D. Chou, D. Hogan, S. Zhang, A.B. Moller and A. Gemmill. 2016. "Global, regional, and national levels and trends in maternal mortality between 1990 and 2015 with scenario-based projections to 2030: A systematic analysis by the UN Maternal Mortality Estimation Inter-Agency Group". *Lancet*, 387(10017): 462–74.
- Dimbuene, Z.T., J. Amo-Adjei, D. Amugsi, J. Mumah, C.O. Izugbara and D. Beguy. 2018. "Women's education and utilization of maternal health services in Africa: A multi-country and socioeconomic status analysis". *Journal of Biosocial Science*, 50(6): 725–48.
- Gandhi, S., U. Dash, and M. Suresh Babu. 2022. "Horizontal inequity in the utilisation of Continuum of Maternal Health Care Services (CMHS) in India: An investigation of ten years of National Rural Health Mission (NRHM)". *International Journal for Equity in Health*, 21(1): 1–15. <https://doi.org/10.1186/s12939-021-01602-3>
- Hahn, R.A., and B.I. Truman. 2015. "Education improves public health and promotes health equity". *International of Journal of Health Services*, 45(4): 657–78.
- Kakwani, N., A. Wagstaff and E. van Doorslaer. 1997. "Socioeconomic inequalities in health: Measurement, computation, and statistical inference". *Journal of econometrics*, 77(1): 87–103.

- Khan, R. E. A. and Raza, M. A. 2013. “Maternal healthcare in India: the case of tetanus toxoid vaccination”. *Asian Development Policy Review*, 2013, 1(1):1–14
- Marmot, M. 2005. “Social determinants of health inequalities”. *Lancet*, 365(9464): 1099–1104. [https://doi.org/10.1016/S0140-6736\(05\)71146-6](https://doi.org/10.1016/S0140-6736(05)71146-6)
- Marmot, M.. and R.G. Wilkinson. 1999. *Social Determinants of Health*. Oxford University Press.
- Mangalore, R., M. Knapp, and R. Jenkins. 2007. “Income-related inequality in mental health in Britain: The concentration index approach”. *Psychological medicine*, 37(07): 1037–1045.
- Ministry of Health. 2015. Health Sector Strategy 2016–2027.
- Moniz, M.H. and R.H. Beigi. 2014. “Maternal immunization: Clinical experiences, challenges, and opportunities in vaccine acceptance”, *Hum. Vaccines Immunother*, 10(9): 2562–70. <https://doi.org/10.4161/21645515.2014.970901>
- National Institute of Statistics (NIS) and ICF International. 2012. *Cameroon Demographic Health and Multiple Indicator Survey 2011*. Final Report. Calverton, Maryland, USA: National Institute of Statistics and ICF International.
- National Institute of Statistics (NIS) and ICF International. 2020. *Cameroon Demographic Health and Multiple Indicator Survey 2018*. Final Report. Calverton, Maryland, USA: National Institute of Statistics and ICF International.
- Özsoy, O. and S. Alcan. 2017. “Horizontal equity in delivery of health care in Turkey”. *International Academic Journal of Economics*, 4(1): 1–22.
- Saleu, F.J. 2020. *Role of Maternal Education and Prenatal Care on Child Health in Cameroon*. AERC Research Paper No. 399. African Economic Research Consortium, Nairobi.
- Tambi, M.D. 2015. *Effects of Maternal Immunization on Birth Weight in Rural Cameroon*. AERC Research Paper No. 413. African Economic Research Consortium, Nairobi.
- Tangcharoensathien, V., Mills, A. and Palu, T. 2015. Accelerating health equity: the key role of universal health coverage in the Sustainable Development Goals. *Medicine for Global Health*. 13: 101. DOI: 10.1186/s12916-015-0342-3
- Van Doorslaer, E., P. Clarke, E. Savage, and J. Hall. 2008. “Horizontal inequities in Australia's mixed public/private health care system”. *Health Policy*, 86(1): 97–108.
- Wagstaff, A. and E. van Doorslaer. 2000a. “Equity in health care financing and delivery”. In A.J. Culyer and J.P. Newhouse, eds., *Handbook of Health Economics*, pp. 1803–62. Amsterdam: NorthHolland.
- Wagstaff, A. and E. van Doorslaer. (2000b. “Measuring and testing for inequity in the delivery of health care”. *Journal of Human Resources*, 35(4): 716–33.
- Wagstaff, A., E. van Doorslaer and N. Watanabe. 2003. “On decomposing the causes of health sector inequalities with an application to malnutrition inequalities in Vietnam”. *Journal of Econometrics*, 112(1): 207–23.
- Whitehead, M., and G. Dahlgren. 2006. “Concepts and Principles for tackling social inequities in health: Levelling Up, Part 1”. Organization Mondiale de la Santé, Genève.
- World Health Organization (WHO). 2017 “Weekly epidemiological record: Tetanus position paper”. *Weekly Epidemiol. Record*, 92(6): 53–76.



Mission

To strengthen local capacity for conducting independent, rigorous inquiry into the problems facing the management of economies in sub-Saharan Africa.

The mission rests on two basic premises: that development is more likely to occur where there is sustained sound management of the economy, and that such management is more likely to happen where there is an active, well-informed group of locally based professional economists to conduct policy-relevant research.

Bringing Rigour and Evidence to Economic Policy Making in Africa

- Improve quality.
- Ensure Sustainability.
- Expand influence.

www.aercafrica.org

Learn More



www.facebook.com/aercafrica



www.instagram.com/aercafrica_official/



twitter.com/aercafrica



www.linkedin.com/school/aercafrica/

Contact Us

African Economic Research Consortium
Consortium pour la Recherche Economique en Afrique
Middle East Bank Towers,
3rd Floor, Jakaya Kikwete Road
Nairobi 00200, Kenya
Tel: +254 (0) 20 273 4150
communications@ercafrica.org