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# Doctoral Dissertation summary

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Title

Impact of Geography and Climate Change on Maternal and Child Health Care in Developing Countries


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## Summary

Despite the achievement of the Millennium Development Goals (MDGs) by 2015, the situation of maternal, neonatal and child health in Sub-Saharan Africa (SSA) is among the worst in the world. On September 25, 2015, the United Nations succeeded the MDGs and launched Sustainable Development Goals (SDGs) for the next 15 years by 2030. These 17 goals with 169 targets and 232 unique indicators, aimed at achieving human well-being by coordinating and stimulating environmental sustainability, social inclusion, and economic growth at global level. Therefore, governments around the world including developing countries committed to achieving the SDGs. Among the 17 goals of SDGs, “Ensure healthy lives and promote well-being for all at all ages” (SDG 3) and “Take urgent action to combat climate change and its impacts” (SDG 13) have remained among the top priorities for SSA countries.

Accessing to good health care remains one of the major challenges for many people living in developing countries, especially in SSA. In this dissertation I investigated different aspects of the factors preventing accessibility to appropriate health care by mothers and their children in SSA. Main objectives of the study are to examine the geographical barriers affecting maternal and child health (MCH) in SSA. Therefore, in the first chapter, I examined the effect of geographical accessibility to health facilities on antenatal care and delivery services utilization in Benin where, the maternal health care utilization has decreased. As methods, I used two latest cross-sectional data from the Benin Demographic and Health Survey (BDHS), along with geographic information system data, and applied multivariate logistic regressions.

Another purpose of this study is to assess the impact of climate change on neonatal and child health in SSA. Therefore, in the second chapter, I analyzed the effect of temperature and precipitation on birth weight in Benin. As for the method, I used four rounds of BDHS along with the monthly precipitation and temperature averages of each cluster and performed multivariate multilevel linear and logistic regression. Then, in the third chapter, I investigated the effect of temperature and precipitation on child undernutrition in Mali where child undernutrition is among the highest in the region. As an empirical method, I used two latest rounds of the Mali DHS along with the monthly precipitation and temperature averages of each DHS cluster and performed multivariate multilevel logistic regression analyses.

From the empirical results, I confirmed that both geographical and climatic factors had significant effects on MCH care seeking behaviors and MCH outcomes in developing countries. These findings suggest that it is critical to improve geographical accessibility to health facilities and people's adaptability against climate change. Furthermore, strategies need to be created to facilitate transportation for families living in remote areas in accessing health facilities as well as improving household's food security. Policies on climate change should focus not only on promoting agricultural programs but also giving prominence on the health of the most vulnerable that are women and children.