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Room Pascal - 313

Essais sur l’économie du paludisme au sahel : études de cas au Mali et au Burkina Faso

JURY

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SUMMARY OF THESIS

The implementation of the Millennium Development Goals (MDGs) has led to significant but uneven progress between countries. Sub-Saharan African countries continue to be characterized by high proportion of out-of-school children, high child mortality and a high burden of communicable diseases in the overall disease burden, including malaria. Added to this is a high fertility level with its potential economic consequences. The Sustainable Development Goals also target malaria for elimination by 2030 and advocate for quality education for all, including early childhood care, which had been overlooked in the MDGs. This thesis focuses on analysing aspects of development linked to these global challenges. This thesis focuses on analyzing aspects of development related to these global challenges.
The first chapter analyses the impact of malaria control campaigns on fertility in Mali using data from the Demographic and Health Surveys of 2006 and 2012 and those of the Malaria Atlas Project for the same period. The results show that malaria has a negative effect on fertility (-0.24 children). Among the mechanisms that explain this effect (infant deaths, abortions), mother’s education is more important. The second chapter examines the relationship between malaria, household income and investment in education through a randomized controlled trial in a village in Mali. Surveys were conducted in July and December 2016 within the same households, with microscopic screening for malaria in children aged 3 months to 5 years. The results show that relaxing the constraints of economic losses linked to malaria (direct costs, care expenses, and/or loss of productivity) allowed households to save 3194 F CFA (5 euros) and to make additional expenditures of 2863 FCFA (4 euros) in children's education. The third chapter, also a randomized controlled trial, analyses the effect of reminder messages and information to household heads on the use and adoption of the ITN strategy using a mobile phone platform in Bobo Dioulasso, Burkina Faso. Surveys were conducted in 2013, 2016 and 2017 to collect data within the same households. The results show that the problem of inappropriate use of preventive malaria care can be solved by using the traditional method of health awareness or by disseminating information messages to heads of households through a mobile phone platform. The effect was between 4.6 and 6 percentage points for text and voice messages respectively. The fourth chapter analyses the impact and cost of a set of health and education strategies (micronutrients, CPS, deworming) on improving early childhood development. This was a randomized controlled trial with villages as the randomization unit, conducted in 2016 in an area of high malaria transmission and high prevalence of anaemia, in Sikasso in southern Mali. The cost of the different strategies was evaluated from the provider's perspective for a relatively short time horizon. The integrated disease control strategies, the implementation of Early Childhood Development Centres and parental education did not have an impact on early childhood development. However, the cost of implementing these strategies was limited.

In conclusion, malaria is a burden on economic development through its effects on fertility and income, potentially penalising investment in education. Our results therefore contribute to the existing literature on the effect of malaria on economic development.

**KEYWORDS**

Malaria, Fertility, Education, Income, Information, LLINs, CPS, Micronutrients, Anaemia, Early Childhood Development, Cost.