ORIGINAL RESEARCH

Rural-Urban Differences in Trends in the Wealth Index in Kenya: 1993-2009

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Leonard E. Egede, MD, MS, Delia Voronca, PhD, Rebekah J. Walker, PhD, Craig Thomas, MD

Milwaukee, Wisconsin; Rockville, Maryland; and Pensacola, Florida

Abstract

BACKGROUND The aim of this study was to construct a wealth index that could be compared over time in order to understand the trends in wealth in Kenya and determine predictors of change in wealth index.

METHODS Data were from the Demographic and Health Survey program collected in Kenya between 1993 and 2009. Variable categories were collapsed to match and factor analysis was performed on the 4-year pooled data to generate a harmonized wealth index. Possible predictors of wealth were selected from household variables available for all 4 years. Household sampling weights and stratification by rural/urban was used.

RESULTS Overall, wealth increased in Kenya between 1993 and 2008; however, when stratified, no significant increase existed in urban areas and a significant increase was identified in rural areas specifically between 2003 and 2008. The strongest predictor was education, with more than a standard deviation difference for secondary or higher levels of education over those with no education. The association of gender of the head of household and whether the head of household had a partner differed between rural and urban areas, with household heads who were women and those who had a partner having more wealth in urban areas but less wealth in rural areas.

CONCLUSION Wealth in Kenya increased over time, specifically in rural regions. Differences were identified in predictors of wealth by urban/rural residence, educational level, and gender of the head of household and should be taken into account when planning interventions to target those in disproportionately low wealth brackets.

KEY WORDS wealth, rural, urban, Demographic and Health Survey, Kenya

INTRODUCTION

The importance of wealth in the health of individuals and populations has been found across the globe.[1] Poorer nations tend to have inferior health to wealthier nations, poorer people have worse health outcomes compared with wealthier people, and economic growth has been found to improve health.[1-3] Health at the population level is an important factor in stimulating economic growth, through accumulation of both human and physical capital.[3,4] For example, between 2000-2011 a quarter of the economic growth in low- and middle-income countries was attributed to health

improvements.[4] Not only adult survival but also disease prevalence rates and cognitive functioning have been reported as important factors in maintaining a supply of skilled labor, which is necessary for economic growth.[5] At the macroeconomic level, health has also been linked to gross domestic product, such that a 4% raise in gross domestic product per capita is associated with a 1-year increase in life expectancy.[4] At the personal level, income is one of the strongest determinants of health outcomes.[1,3,4] Socioeconomic disparities in health as a result of differential income have been found in childhood mortality, immunization, treatment of common childhood illnesses, health-related behaviors, and health status determinants.[6,7]

Difficulties in understanding the relationship between health and wealth and the possible factors that may mediate this relationship, such as education, housing, and sanitation, are in part the result of measurement problems surrounding both health and wealth.[3] More recent studies have overcome some difficulties in collecting preferred indicators of economic status, such as income, which are less reliable in low- and middle-income countries, by using a wealth index.[6] This index uses easy-to-collect information on assets, housing construction materials, and types of water and sanitation access to create a continuous scale of relative wealth and generate a measure of a household's standard of living.[8] One of the strongest utilities of the wealth index is that it creates a standard for comparison across nations, especially with varying reliability and accessibility of income and expenditure data.[8] The wealth index allows for comparison of socioeconomic disparities across health outcomes, and differences in access between poor and wealthy communities.

Although marginal in some areas, current health indicators reveal that Kenya has had improvement in overall population health.[9,10] Notable of those indicators is the life expectancy increasing from 45.2 years in 1990s to 60 years in 2012.[9] Other indicators such as infant and under-5 mortality rate have experienced similar improvement, from 77 and 115 in the 1990s to 48 and 73 per 1000 live births, respectively, in 2012.[9,10] Despite these advances, disparities in health along lines of gender, ethnic group, socioeconomic status, and geographic access are present and affect health care outcomes.[9,11-13] Children who are both economically and geographically vulnerable were found to be the most disadvantaged.[14] Communicable diseases remain high and noncommunicable diseases are increasing.[10,15-17] Therefore, addressing barriers to health care will likely be a key element in positively affecting health outcomes in the long term.[18]

Use of the wealth index has been helpful in identifying differences by socioeconomic status in order to focus intervention efforts. In Kenya, disparities were found among the number of children immunized; for instance, in 2008, 73% of children in Nairobi were immunized, compared with 53% of children living in less urban communities.[19] Among children in Nigeria, children from the wealthiest households are 13 times more likely to receive vaccination than those from the poorest families.[8] African nations, including Tanzania, have a significantly higher prevalence of HIV among women in the wealthiest households compared with the poorest.[8]

Understanding such disparities may lead to targeted interventions to improve health outcomes for those in disproportionately low wealth brackets.[15,20] For example, use of the wealth index has allowed for identification of various sociodemographic determinants of health in several countries.[8] However, the literature indicates that the wealth index, as a tool, has been underutilized in Kenya, with limited data identified to understand the sociodemographic determinants of health outcomes. Therefore, the aim of this study was to construct a wealth index that can be compared over time in order to understand the trends in wealth in Kenya and determine predictors of change in wealth index.

METHODS

Study Sample. Data were from the Demographic and Health Survey (DHS) program collected through 4 surveys conducted in Kenya between 1993 and 2009.[21-24] The DHS program provides nationally representative data on topics such as domestic violence, child health, nutrition, HIV/AIDS, wealth, and women's empowerment collected in more than 90 countries.[25,26] The household questionnaire is used to record data specific to the household, as well as specific to the individuals living in the household. Individual specific information includes gender, age, and education of the household head. Household-specific characteristics include region type, district, source of drinking water, toilet facilities, cooking fuel, and assets of the household. Surveys are population based to provide data that are comparable across countries. Each country uses a standard model questionnaire format but questions may be added if of particular interest