Household Wealth Relative to Community Wealth: Associations with Maternal and Reproductive Health

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1 BACKGROUND AND THEORETICAL FOCUS

1.1 Background

The objective of this analysis is to further explore the role of intra-community wealth inequality on the probability of achieving specific health indicators in rural populations in 57 countries.

Inequality in maternal and reproductive health coverage has been a persistent challenge between and within countries, with lower wealth associated with worse health outcomes (Barros et al. 2012; Boerma et al. 2008). Most research to date on inequality in maternal and reproductive health indicators focused on national and regional inequality. However, this research frequently neglects inequalities that occur closer to home and at the community level.

The following section describes the rationale for assessing each topic in this analysis from an intra-community inequality perspective.

1.2 Rationale

Persistent inequities in maternal and reproductive health outcomes have been documented over time. These inequities are persistent when using absolute or relative measures of inequality and when assessing inequalities at national or regional levels (Assaf 2016).

There is limited evidence on the association of inequality within a smaller geographic area, and specifically community, with these same outcomes. Much of the available research on this topic focuses on community inequality and contraceptive use. Community-level wealth has been associated with individual contraceptive uptake in Ethiopia (Abate and Tareke 2019), and both community-level wealth and the relative wealth status of women within their communities have been shown to be associated with modern contraceptive uptake in Mozambique (Dias and de Oliveira 2015). In the child nutrition arena, greater community wealth has shown to be associated with greater odds of child stunting in Bangladesh and Kenya (Reinbold 2011).

The concept that the relative wealth of a household, as compared to its community, can affect health is closely related to the concept of relative deprivation, which proposes that an individual's health is determined not only by their own wealth or resources, but also by their relative wealth or resources (Caner and Yiğit 2019). Relative deprivation suggests that being deprived of something while others have it will affect health in one of two ways: either by limiting access to material goods, or by negative psychosocial effects (Wilkinson 1997). Relative deprivation has been associated with mortality in South Africa (Salti 2010), poor nutritional outcomes in adults in Zambia (Cole 2012), and depression in adults in Uganda (Smith et al. 2019). There is little evidence on relative deprivation, receipt of maternal and reproductive health interventions and care-seeking in low- and middle-income countries.

This analysis considers the following question: What does a household's relative community wealth, that is, its wealth as compared with the average wealth of its community, mean for coverage of maternal and reproductive health interventions?

This report investigates the association between a household's wealth status relative to its community versus use of various MCH services. For reasons that will be explained in the data and methods section, we restrict our analysis to rural areas.

2 DATA AND METHODS

2.1 Data

This report uses data from 57 countries with DHS surveys in the past 10 years.

The community is a key element in our analysis. In general, the DHS program does not specifically collect information on communities. In our analysis, we use the sampling cluster as a proxy for communities. The sampling clusters are typically based on census enumeration areas or other partitions of the population where the population is geographically contiguous and more or less compact.[1] In rural areas, there is typically one health facility that serves a community or group of communities. In urban areas with denser populations, the catchment areas of health facilities are less clear. Health facilities may serve overlapping catchment areas. Households may also have access to more than one health facility. In this way, urban communities that are proxied by sampling clusters are analytically much less useful than rural communities proxied by sampling clusters. Therefore, we limited our analysis to rural areas. The study used the standard DHS urban-rural classifications, which rely on each country's own census definitions.

2.2 Methods

2.2.1 Measure construction

Relative wealth

Using a standardized approach for measuring wealth across both urban and rural settings has been shown to be problematic (Chakraborty et al. 2016; Steinert et al. 2018). When using a standardized approach, urban households dominated the higher wealth quintiles, and rural households the bottom quintiles in most settings (Rutstein 2008). The DHS program responded to this by creating separate urban and rural wealth indices and then combining them into one national wealth index, based on the presence or absence of household items or characteristics thought to be common and having common weighting in both urban and rural areas. In more recent surveys, urban-specific and rural-specific wealth quintiles are by default calculated by the DHS program and included in the standardized datasets. When available, we will use these wealth indices. In the older data sets, we will use the national level continuous wealth index with the quintiles recalculated to be equal across the rural areas. Further details on the calculation of the wealth index are available at the DHS program website.

To describe the relative socioeconomic position of a household to the average socioeconomic position in its community, we computed an additional measure of wealth inequality. The mean of the continuous wealth score for each cluster was calculated. These values were divided into quintiles to create community-level wealth quintiles. Each household was then categorized according to its socioeconomic position in the

[1] There is variability in how the clusters are selected. Sometimes census tracts are combined if there are insufficient households in the tract for the second stage of sampling. Other times census tracts are subdivided if there are too many households in the tract.

community relative to the community mean. Households in a lower wealth quintile compared to the average wealth quintile of its community were labeled as "poor relative to the community." A household that was in the same wealth quintile as the average wealth quintile of their community was labeled as "similar wealth relative to the community." If the household was in a higher wealth quintile compared to the average wealth quintile of its community, it was labeled as "wealthy relative to the community."

Maternal and reproductive health outcomes

This report focuses on three maternal and reproductive health (MRH) indicators:

- Four or more visits for antenatal care (ANC)
- Contraceptive prevalence rate for modern methods (mCPR)
- Delivery in a health facility (DHF)

Covariates

In the multivariate regression analysis of MRH indicators, additional sociodemographic covariates of education (none, primary, secondary, or higher), number of living children (0, 1-2, 3-5, 6+), and health care decision-making (decides on own health care either alone or jointly with partner, or does not) were included.

2.2.2 Analysis

We will use Stata version 16.0 for the analysis. All statistical tests adjusted for the complex survey design and applied survey weights.

Assessing inequalities in MCH health indicators by household wealth relative to community wealth

For each of the MRH indicators we will perform the following analyses:

- We will assess bivariate and multivariate associations via logistic regressions for each MRH indicator. The covariates included household wealth quintile, household wealth relative to the community, and appropriate control variables as described in the data section of this report.
- We will calculate the predicted probability with 95% CIs of all MCH indicators at each combination of relative community wealth and household wealth quintile, while holding the distribution of all other covariates the same in the population.
- We will calculate the average marginal effect of being poor relative to community compared to being rich relative to community on each MCH indicator.

3 ANTICIPATED RESULTS

While we anticipate that the effect of household wealth relative to community wealth on MRH indicators differs by context, we do expect to see some trends. These include:

- A larger effect of relative wealth on delivery at a health facility compared to the other indicators.
- Positive effect of being poor relative to community compared to being at the average community wealth on coverage of all three indicators.
- Negative effect of being rich relative to community compared to being at the average community wealth on coverage of all three indicators.
- Effects likely decreases as the wealth quintile of the household increases. For example, women from households that are 1) in the poorer wealth quintile and 2) poor relative to community will be more likely to deliver at a health facility compared to women that are 1) in the poorer wealth quintile and 2) rich relative to community, and that effect will be larger than the comparison of women from households that are in the rich wealth quintile.

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