Socioeconomic inequalities in informal payments for health care: An assessment of the 'Robin Hood' hypothesis in 33 African countries

Hyacinthe Tchewonpi Kankeu [a, *], Bruno Ventelou [a, b]

[a] Aix-Marseille University (Aix-Marseille School of Economics), CNRS & EHESS. GREQAM — Centre de la Vieille Charité, 2 Rue de la Charité, 13236, Marseille, Cedex 2, France
[b] ORS PACA, Observatoire Régional de la Santé, Provence Alpes Côte d'Azur. 23 rue Stanislas Torrents, 13006 Marseille, France

ARTICLE INFO

ABSTRACT

In almost all African countries, informal payments are frequently made when accessing health care. Some literature suggests that the informal payment system could lead to quasi-redistribution among patients, with physicians playing a 'Robin Hood' role, subsidizing the poor at the expense of the rich. We empirically tested this assumption with data from the rounds 3 and 5 of the Afrobarometer surveys conducted in 18 and 33 African countries respectively, from 2005 to 2006 for round 3 and from 2011 to 2013 for round 5. In these surveys, nationally representative samples of people aged 18 years or more were randomly selected in each country, with sizes varying between 1048 and 2400 for round 3 and between 1190 and 2407 for round 5. We used the 'normalized' concentration index, the poor/rich gap and the odds ratio to assess the level of inequality in the payment of bribes to access care at the local public health facility and implemented two decomposition techniques to identify the contributors to the observed inequalities. We obtained that: i) the socioeconomic gradient in informal payments is in favor of the rich in almost all countries, indicating a rather regressive system; ii) this is mainly due to the socioeconomic disadvantage itself, to poor/rich differences in supply side factors like lack of medicines, absence of doctors and long waiting times, as well as regional disparities. Although essentially empirical, the paper highlights the need for African health systems to undergo substantial country-specific reforms in order to better protect the worse-off from financial risk when they seek care.

© 2016 Elsevier Ltd. All rights reserved.

1. Introduction

Out-of-pocket expenses continue to represent important shares of total health expenditure in many low- and middle-income countries. In fact, according to the World Health Organization (2015), in 2013, out-of-pocket expenditure accounted for more than 50% of the total health financing in 35 countries. Except Singapore and Saint Kitts and Nevis, all these countries are classified as low- or middle-income by the World Bank (2015). Because of widespread corruption, low and irregular remuneration of health workers, information asymmetry between patients and care providers and other factors, important proportions of these out-of-pocket expenses are made in the form of informal payments — e.g. bribes, kickbacks — (Stringhini et al., 2009; Vian et al., 2006; Balabanova et al., 2004). These unofficial payments are generally made to access care, avoid queues, receive high quality care or express gratitude and can be initiated by the patients or the health personnel (Maestad and Mwisongo, 2011; Tatar et al., 2007; CEEHN, 2002).

Although this issue has been well studied in the literature, very little work has been done in Africa, since most existing studies mainly cover countries of Central and Eastern Europe (Chereches et al., 2013; Stepurko et al., 2010). According to Ensor and Savelyeva (1998), informal payments may lead to a quasi-redistribution, with physicians subsidizing the poor at the expense of the rich. Although Szende and Culyer (2006) who refer to this behavior as a 'Robin Hood' role showed that it was not verified in Hungary, it is interesting to confront this idea to the African context where access to health care for the poorest remains an important issue. In their paper, Ensor and Savelyeva (1998) suggest that "providers may price discriminate so that the rich are charged more than the poor". If this hypothesis is verified, informal payments would therefore lead to a redistributive systems in favor of the poorest. Following

---

Kessel (1958) and Szende and Culyer (2006), two main reasons can make this happen. First, price discrimination can be observed because doctors represent a 'collection agency for medical charities' (the'Robin Hood' role) that charges the better-off above the marginal cost and uses the generated income to provide care at a lower cost to the worse-off. The second argument explains price discrimination by doctors from an economic perspective, since it is viewed as the rational profit-maximising behaviour of a discriminating monopolist. In fact, when informal payments are analysed in a rent-seeking model, doctors can expect the economic rent they want to extract to be higher for rich patients than for the poor. Whatever its explanation, price discrimination means that patients with higher living standards pay more than poorer patients for the same medical care (Szende and Culyer, 2006). This paper aims to study the socioeconomic gradient in demands for informal payments and in the actual payment of bribes in public health facilities in Africa. In other terms, we want to estimate the extent of living standards-related inequalities in informal payments in the selected countries and attempt to identify the main factors that contribute to these inequalities. The primary objective is not to compare countries, but to describe the distribution of informal payments along a socioeconomic scale in each country and check if this distribution is in favor of the poorest in some countries.

Measuring socioeconomic inequalities in a population's health variables is relevant since the average values often hide differences within and across subgroups. In fact, some authors have found no significant effect of the income on the probability and amount of informal payments (Kankeu et al., 2014; Tomini and Maarse, 2011; Aarva et al., 2009; CEEHN, 2002) or mitigated associations (Özgen et al., 2010; Balabanova and McKee, 2002). Therefore, there is still a need to elucidate how the occurrence of informal payments for health care is distributed among patients. Following this section is the methodology used in this work, including the data source and selected background information on the countries covered. The third section contains results and the final section presents a discussion of the results and identifies areas for further research.

2. Data and methods

2.1. Data

We use data from rounds 3 and 5 of the Afrobarometer surveys conducted in 18 and 34 African countries respectively, from March 2005 to February 2006 for round 3 and from October 2011 to June 2013 for round 5 (Afrobarometer data, 2005–2006, 2011–2013). Afrobarometer is an independent research project that produces a series of national public attitudes surveys on democracy and governance in Africa. These datasets are all publicly available and for the present work, an ethical approval was not needed. The informed consent of all interviewees was obtained and all the members of Afrobarometer country teams (fieldworkers, supervisors, data entry clerks, data manager, national investigator, etc.) had to sign a research ethics agreement. Nationally representative samples of people aged 18 years or more were randomly selected in each country, with sizes varying between 1048 and 2400 (a total of 25,397 individuals) for round 3 and between 1190 and 2407 (a total 51,605 individuals) for round 5 (Dulani et al., 2013; Afrobarometer, 2006). Interestingly, countries can be compared since a standard set of questions was asked for both rounds. Two outcome variables are considered in this paper. First, a binary variable indicating whether the individual had to make an informal payment at least once during the last 12 months when seeking care at the local health facility. The question was: *In the past year, how often, if ever,*

have you had to pay a bribe, give a gift, or do a favor to government officials in order to: Get treatment at a local health clinic or hospital? The possible answers were: *Never; Once or twice; A few times; Often* and *No experience with this in the past year*. The phrasing of the question does not allow to know whether the informal payment was initiated by the patient or health workers, but it highlights the fact that the bribe was a condition of obtaining the needed health care (Peiffer and Rose, 2014). Previous research has already shown that identifying the initiator of the informal payment is important to better understand this phenomenon (Stepurko et al., 2010). With respect to this, we have considered a second binary variable indicating whether the individual has faced at least one demand for informal payments during the last 12 months (The question was: *Have you encountered any of these problems with your local public clinic or hospital during the past 12 months: Demands for illegal payments?* With the same possible answers as previously). However, this question was asked only in round 3 of the Afrobarometer surveys and is therefore not available for round 5.

The variable used as indicator of living standards or socioeconomic status is the Lived Poverty Index (LPI) which was introduced by Mattes et al. (2003) and is consistently used in Afrobarometer studies (Peiffer and Rose, 2014; Dulani et al., 2013). It is an aggregated measure of how frequently people actually go without basic necessities during the course of a year. Interviewees were asked: *"Over the past year, how often, if ever, have you or your family gone without enough − food, water, cooking fuel, cash income −".* The possible answers were $0 = Never$, $1 = Once\ or\ twice$, $2 = Several\ times$, $3 = Many\ times$ and $4 = Always$. For each individual, this deprivation index is obtained as a simple mean of his scores on the four domains and ranges from 0 (no lived poverty) to 4 (constant absence of all basic necessities). To avoid endogeneity issues, we have excluded the question on unmet needs of medicines or medical treatment in the calculation of this index. Also, we have inverted the values for each domain, so that the LPI provides a classification of individuals from the 'poorest' (the most deprived) to the 'richest' (the least deprived). Mattes et al. (2003) have showed that national means of the LPI are strongly correlated − in terms of relative country rankings − with alternative poverty measures (e.g. GNP per capita, GNP PPP) and that the LPI also provides virtually the same cross-provincial (within a country) results as other measures. For this reason, the methodological choice made by the author of the Afrobarometer survey was to rely on the LPI which was considered as a simple and direct, measure of household living standards, especially in the context of developing countries where assessing income, expenditure or assets may require extensive questioning of relatively large household samples (Mattes et al., 2003). Such deprivation indices for individuals − with different methods of aggregation − are often used in the literature to study socioeconomic inequalities in health or social outcomes (Urbanos-Garrido, 2012; Salmond et al., 2005).

2.2. Analysis

2.2.1. Measuring inequalities

The main tool we use for our analysis is the concentration index which is a usual means of quantifying the degree of inequality in a specific variable. Here, it is used to quantify the degree to which demands and occurrences of informal payments are more concentrated towards the poor or the rich. Eq. (1) shows how the concentration index (C) can be computed with individual-level data (Wagstaff, 2005; Kakwani et al., 1997). Individuals are ranked according to their socioeconomic status (Lived Poverty Index), beginning with the most disadvantaged.