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Socioeconomic Inequalities in Access to Health Care: Examining the Case of Burkina Faso

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Abstract: The past decade has recorded remarkable interest in socioeconomic inequalities in health care. A multivariate analysis of the World Health Survey data for Burkina Faso was conducted using STATA. This included questions on household economic factors, perceived need, and access to health care. Poverty was defined using Principal Components Analysis. There was no significant difference in perceived need on the basis of poverty or gender. The less poor accessed health care more than the poor, but this difference was significant only among males. Respondents who lived in urban areas accessed health care more than those in rural areas, but this difference was significant only among females. We argue that health care financing arrangements affect self-reported need and access to health care. Even when they perceive need, the poor do not access care, probably because of cost, exacerbated by non-availability of readily accessible health care facilities.

Key words: Burkina Faso, low-income country, poverty, health disparities, principal components analysis, perceived need, self-reported access.

In recent decades, there has been considerable interest in population health inequities and their association with socioeconomic status (SES). Several authors have demonstrated these inequities as a gradient in different countries using different outcome measures. There is now a reasonably well accepted view in the literature that as wealth increases, so too does the tendency for self-reported morbidity and the utilization of health services. The former view is not completely uncontested, and appears partially to depend on the health condition and the social context. Social gradients in self-reported morbidities have, however, been observed in both developed and developing countries. It is widely accepted, therefore, that the wealthy have a greater capacity to access and utilize health services than the poor.

The strength of the patterns in self-reported morbidity and health service utilisation seems to attenuate somewhat where the state provides free health care. For instance,

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among European countries, the inequality gap is smallest for Sweden, a fact that is attributable to the country's social democratic policies, which result in smaller societal inequities overall.^{1,21} Notably, however, the gradient exists even in Sweden.^{22–28}

The gradient relationship under discussion is predicated on there being no minimum threshold of absolute wealth. This has mainly been demonstrated by dividing the population into x-tiles based on some wealth indices, and then comparing the outcome or indicator of interest across the whole spectrum (from top to bottom on the socioeconomic hierarchy). Some authors prefer to look at the health gap rather than the gradient, ^{10,29–35} that is, to focus on the differences between the worst off and everybody else (assuming that everybody else apart from the worst off enjoys equally good health). ^{4,36,37}

Numerous studies have looked at equity both within and between countries. 10,38-46 Relatively few of these studies have focused on the world's poorest populations. A number of considerations may explain this, including the fact that most economically poor countries are also data-poor. Routine vital statistics are not reliable, if they are available at all, and the health information systems may be anything but viable. This makes it difficult to capture trends and monitor progress. However, it was hypothesized that observations in data-rich countries would apply to data-poor ones, 1 so we decided to see if and to what extent this holds.

We looked at Burkina Faso, one of the least developed and poorest countries in the world. In 1987, Sierra Leone and Burkina Faso were equally ranked third from the bottom on the United Nations Development Programme (UNDP) Human Development Index. In recent years, Sierra Leone has been consistently ranked at the bottom, and Burkina Faso has maintained its position in the bottom three. In 2002, it was ranked 175th out of 177 countries. In 2005, it was ranked as one of the bottom two (176th). Unlike Sierra Leone, for which no significant population health surveys have been conducted, a number have been conducted in Burkina Faso, including Demographic and Health Survey (DHS) and the World Health Survey (WHS). These informed our choice of Burkina Faso for this study.

Burkina Faso. Geographically, Burkina Faso is landlocked, bounded in the north by Mali, in the south by Ghana, in the east by Niger and in the west by Cote d'Ivoire. With an estimated population of about 16 million (and an annual population growth rate of 3.109%) in 2008, Burkina Faso had a young median age of 16.7 years, and a birth rate of 44.68 and a death rate of 13.59 per 1,000 population. It has a high total fertility rate of 6.34 children/ woman; an infant mortality rate of 86.02 deaths/1,000 population; and a low life expectancy of 52.55 years (Table 1).

Socioeconomic indicators show that Burkina Faso has a predominantly illiterate population: only 21.8% of people aged 15 years and over are able to read and write. Agriculture accounts for about 90% of their labour force by occupation, and 46.4% of the whole population lives below poverty line of less than US\$1 per day.

The health system in Burkina Faso is divided into 11 administrative health regions.⁵¹ In 1992, a health sector reform programme was begun based on the Bamako Initiative (BI). This reform focused on decentralization and implementation of cost recovery mechanisms, the supply of Essential Generic Drugs (EGD) and the liberalization of the health services.⁴⁷ Table 1 captures some of the indicators of interest.

Table 1.

GENERAL DEMOGRAPHIC, HEALTH AND SOCIOECONOMIC INDICATORS, BURKINA FASO

Geography

Location West Africa, north of Ghana

National hazards Recurring droughts

Environmental current issues Droughts affecting agricultural activities,

population distribution and the economy

Demographic

Population 15,264,735 (July 2008 est.)

Age structure 0–14 yrs (46.3%); 15–64 yrs (51.1%);

65 yrs and over (2.5%) (2008 est.)

Median age 16.7 yrs (2008 est.)

Population growth rate 3.109% (2008 est.)
Birth rate 44.68 births/1,000 population (2008 est.)

Death rate 13.59 deaths/1,000 population (2008 est.)

Health

Infant mortality rate 86.02 deaths/1,000 population (2008 est.)

Life expectancy at birth 52.55 years (male 50.67 yrs, female 54.49 yrs)

(2008 est.)

Total fertility rate 6.34 children born/woman (2008 est.)

HIV/AIDS adult prevalence rate 4.2 % (2003 est.)

Socioeconomic

Literacy (age 15 and above

who can read and write) 21.8%

Labour force (by occupation) 90% agriculture, 10% industry and services

(2000 est.)

Unemployment 77% (2004 est.)

Population below

poverty line 46.4% (2004 est.)

Methods

The relationship between poverty, perceived need for health care, and subsequent access to the needed care for adults and children were examined using data from the World Health Survey (WHS) for Burkina Faso.

Sample. World Health Survey data were available for all 72 countries that participated. In each country, a stratified, multi-stage cluster sample was employed to obtain nationally representative data. The World Health Organization has made these data available for secondary analyses. Unfortunately, adequate information was only available for the primary sampling unit (PSU) and not the secondary or subsequent sampling units. However, information on the strata was available as were sampling weights to correct for the probability of individual selection.

Procedures. The survey instrument included questions on socio-demographic factors, household economic factors, and self-reported need for and access to and utilisation of health care services. The surveys were delivered face-to-face to an adult in the household, using an appropriately translated instrument (originally written in English and translated to the local language by means of interpreters). The participating adult also responded to questions about the need for health care services by all children younger than 12 years old in the household. The procedures are fully described elsewhere.⁵²

Measures. The age and sex of survey participants were measured directly. Age was recorded in years and categorized into six groups.

Poverty. Poverty was measured at the household level, and was based on principal components analysis (PCA) of a parcel of reported household assets.⁵³ This approach is now a well-accepted alternative in resource-poor setting, where the more difficult-to-collect household expenditure data are unavailable.⁶ Indices of poverty based on PCA have been found to be robust to variations in the assets included in the analysis, and distinguish well between poor, middle-income, and wealthy households.⁵³

The WHS collected data on a range of household assets including the nature and condition of the dwelling (such as the type of toilet, the floor materials, availability of electricity) and portable assets (such as radios, refrigerators, bicycles, and motorcycles). For Burkina Faso, a PCA was conducted on a parcel of these 17 household assets. A relative index of poverty was then constructed by dividing the sample into quintiles of wealth (or poverty).

Outcome measures. The two outcome measures of interest related to the perceived need for health care and access to health care subsequent to a perceived need. *Perceived need for health care* was captured as a binary outcome of whether the participants responded that they ("or a child of theirs aged 12 years or less") perceived need for health care in the past 30 days (1 = Yes, needed care; 0 = No). For those who did perceive a need for health care in the past 30 days, *access to health care* was captured as a binary response to the question "last time you [or a child] needed health care, did you get health care?" (1 = Yes; 0 = No).

Data analysis. Design-based analyses were conducted taking account of stratification, clustering at the first stage, and the sampling probability. Logistic regression was used to analyse the relationship between relative poverty and the two outcomes of perceived need for health care, and access to health care. A two-stage process was used for the analysis. In the first stage, separate bivariate analyses were conducted examining the relationship between poverty, socio-demographic factors, and health care need and access. The multivariable relationship between poverty and self-reported health care need and access was examined, controlling for socio-demographic factors. All analyses were conducted in Stata10 using the appropriate svy commands.⁵⁴

Study sample. A total of 4,804 cases were analysed. Those who reported that either they or their child aged 12 years or younger needed health care in the 30 days prior to survey were 1,242 (25.86%) out of which 1,093 (88.02%) accessed the care they needed. Disaggregated by gender, the sample consisted of 2,532 (52.7%) males and 2,272 (47.3%) females. Of all males, 723.2 (28.56%) needed health care out of whom 643.4 (88.97%) accessed the needed care. Of all the females, 519 (22.84%) reported that they needed care, and 449.9 (86.7%) of them accessed the needed care (Table 2).

Table 2.

SAMPLE DISTRIBUTION FROM WORLD HEALTH SURVEY DATA ANALYSIS

	Number	Percentage (%)
Sample size (N)	4,804	
All who needed health care (male + female)	1,242	25.86
All who accessed needed care (male + female)	1,093	88.02
Males	2,532	52.7
Males who needed health care	723.2	28.56
Males who accessed needed care	643.4	88.97
Females	2,272	47.3
Females who needed health care	519	22.84
Females who accessed needed care	449.9	86.7

Results

The results are presented in Tables 3 and 4. Table 3 shows self-reported perceived need according to the poverty quintiles, gender, marital status, age group, setting, and whether a child or an adult needed care. Table 4 shows self-reported access to needed health care. Percentages as well as bivariate and multivariate odds ratio statistics were reported. Perceived need for care increased from 20.17% in the poorest quintile to 30.64% in the richest quintile. Bivariate analyses suggest that the least poor are 1.75 times more likely to report need (OR=1.83, p<0.01 in males; OR=1.65, p<.05 in females) than the most poor. However, the multivariate analyses (adjusted model) show no differences between them. Gender does not seem to be a significant predictor of self-reported need for health care, even though males reported more need than females in the unadjusted model (OR=1.35, p<.01). Those whose spouse had died reported significantly more need than those who were separated (OR=0.28, p<.05), especially among females (OR=0.08, p<.05). Those who were middle-aged (30-59 years) reported significantly less need than those 70 years and older. Among males, age did not seem to affect selfreported need, while among females only those 18-39 years reported significantly less need than those 70 years and older (OR=0.47 and 0.50; p<.05).

Those who lived in urban areas reported more need than those in rural areas, but this difference was significant only for females (OR=1.6, p<.05). Similarly, children were reported to have needed more care than adults (OR=1.6, p<.01), both by male respondents (OR=1.4, p<.05) and females respondents (OR=1.81, p<.01).

Access to care results are presented on Table 4. Of all those who needed care, about 79% of the most poor and about 91% of the least poor accessed the needed care. Among females, there is no significant difference in access on the basis of poverty status. Among males, the least poor (wealthy) are about twice more likely to have received care than the most poor (OR=1.8; p<.05). Overall, the multivariate analytic model shows that

Table 3. SELF REPORTED PERCEIVED NEED FOR HEALTH CARE

		All			Males			Females	
Needed care	%	Bivariate OR	Multi- variate OR	%	Bivariate OR	Multi- variate OR	%	Bivariate OR	Multi- variate OR
Poverty quintiles									
Q1—most poor	20.17	1 1	22.31	1	1	18.01	1	1	
, (22	27.54	1.5^{**}	1.54^{*}	28.02	1.36	1.32	26.93	1.68^{*}	2*
Q 3	26.9	1.46^{*}	1.33	29.14	1.43	1.25	24.45	1.5	1.4
Q4	24.7	1.3	1.12	28.44	1.38	1.2	20.21	1.2	1.03
Q5—least poor	30.64	$1.75^{\star\star}$	1.25	34.48	1.83**	1.36	26.62	1.65^{*}	1.09
Gender									
Male	28.56	1.35**	1.1						
Female	22.84	1	1						
Marital status									
Never married	15.68	.47**	.59	27.99	1.01	.72	12.72	.31*	.58
Currently married	27.94	86.	68.	28.9	1.06	∞.	26.66	.77	.81
Separated	10.49	.3**	.28*	15.12	5:	.39	4.26	*60.	*80.
Widowed	28.24	1	1	27.72	1	1	31.96	1	1
								(Contir	(Continued on p. 669)

Table 3. (continued)

		All			Males			Females	
Needed care	%	Bivariate OR	Multi- variate OR	%	Bivariate OR	Multi- variate OR	%	Bivariate OR	Multi- variate OR
Age group (years)									
18–29	24.22	.76	99:	31.29	1.14	.94	15.88	.44**	.47×
30–39	27.83	.92	.56*	28.84	1.0	.71	26.52	.84	.50*
40-49	28.91	.97	*65.	28.35	66:	89.	29.47	.97	.58
50-59	22.46	69:	.58*	19.29	9:	9:	26.46	.83	.61
69-09	25.69	.82	.64	27.23	.94	.81	24.48	.75	.53
+04	29.56	1	1	28.56	1	1	30.13	1	1
Setting									
Rural	24.75	1	1	27.52	1	-	21.58	1	1
Urban	31.63	1.4^{**}	1.34	34.4	1.38^{*}	1.15	28.91	1.48^{*}	1.6^{\star}
Adult/child									
Adult	29.25	1	1	32.23	1	-	25.93	1	1
Child	40.57	1.65^{**}	1.6^{**}	40.29	1.4^{**}	1.4*	40.95	1.98**	1.81**
*p<.0									
P = 0OR = Odds Ratio									

the least poor are 1.52 times more likely to have received needed health care than the most poor (OR=1.52; p<.05).

There are no significant gender, marital status, or age group differences in access to health care. However, those who live in urban areas seem to have more access than those who live in rural areas, even though this difference is significant only in females (OR=1.55, p<.05).

Children were reported to be more likely to have access to care than adults (OR=1.63, p<.01). However, males did not report any significant difference between children and adults while females reported that children were about twice more likely than adults to access care (OR=2.14, p<.01).

Discussion

Our results show that 25.86% of respondents perceived need for health care in the recall period. This percentage may be considered high for a developing country, but agrees with previous studies.⁵⁵ The result agrees also with the earlier study on the effect of socioeconomic status on the use of health services.⁵⁵

Inequalities were observed, not for perceived need but for access to health care between the richest and the poorest. More remarkable, though, is that the gradient is not smooth (Figure 1), in contrast with those reported elsewhere. Despite the significant difference in access between the best off and the worst off, the gradient is unusual. These deviations from expectation are worth investigating further. Some possible explanations are discussed below.

Although proponents assumed otherwise, demand for health services has been shown to be price-elastic, especially among the poor. It is possible that the poor are deterred from reporting need because most health care in Burkina Faso is still based on user-fees, which have been shown to be very regressive. Even in places where insurance schemes are available, they may not be affordable for the poor. Reasons to believe that user-fees are worsening the inequality gap between the poor and the rich have been documented, and insurance schemes have not addressed the problem. Even if basic care is free, patients still must purchase most drugs at private pharmacies. Serious negative health effects are sure to follow if user fees prevent seriously ill patients from seeking or even reporting health care.

There are some concerns about cost and quality of health care services in Burkina Faso (as in Cameroon).⁶⁷ It has been reported that cost and perception of the quality of care are two major determinants of demand for health care services, especially because the people are very poor and out-of-pocket costs are very high.⁵¹ It has also been stated that access to health care is constrained by the ability to pay,⁴⁷ because Burkina Faso is one of the countries in the region where common generic drugs are most expensive.⁴⁷ The same paper reported that about 35% of people who did not seek health care they needed said that their failure to do so was because they couldn't afford it, while two-thirds said they had difficulties meeting their health expenses. Similar findings have been reported for Vietnam.⁶⁸⁻⁷⁰ Huge out-of-pocket costs could lead to less use of medical care, given other needs.⁷¹

Regarding quality of care, it was noted that the attitude of health care professionals is

Table 4.

SELF REPORTED ACCESS TO CARE SECONDARY TO PERCEIVED NEED

		All			Males			Females	
Accessed care	%	Bivariate OR	Multi- variate OR	%	Bivariate OR	Multi- variate OR	%	Bivariate OR	Multi- variate OR
Poverty quintiles									
Q1—most poor	78.88	1	1	77.92	1	1	80.08	1	1
Q2	90.73	2.62**	1.78**	90.18	2.6**	1.56^{*}	91.46	2.66	2.3**
Q 3	83.33	1.34	1.38	88.66	2.2	1.43	76.41	.81	1.3
Q4	93.32	3.74**	1.38	92.03	3.27*	1.47	95.51	5.3*	1.26
Q5—least poor	91.28	2.8**	1.52^{*}	92.45	3.5**	1.8^{\star}	89.69	2.2	1.2
Gender									
Male	88.97	1.24	1.12						
Female	86.7	1	1						
Marital status									
Never married	90.4	5.13**	.82	99.98	3	.72	92.37	17**	1.61
Currently married	88.97	4.4**	1.22	89.06	4.5^{**}	œ	86.51	**6	1.98
Separated	100	1	.46	100		4.	100	1	ε:
Widowed	64.72	П	1	68.43	П	1	41.57	П	
								(Contir	(Continued on p. 672)

Table 4. (continued)

Accessed care % Age Groups (years) 18–29 30–39 40–49 90.65	Bivariate OR	1,1						
ears)	OR	Multi- variate		Bivariate	Mul variate		Bivariate	Multi- variate
		OR	%	OR	OR	%	OR	OR
	5.3**	76.	92.3	*6.9	1.42	91.1	4.23**	99.
	4.5**	∞.	88.86	4.6^{\star}	1.02	93.17	5.6**	.73
	4.4**	98.	94.86	10.9^{**}	1.08	86.09	2.55	.74
	1.4	.67	69.46	1.3	.65	80.76	1.7	.72
	2.4	.87	89.83	5.1	1.25	78.76	1.53	.65
	1	1	63.4	1	1	70.78	1	1
Setting								
	1	1	88.98	1	1	85.67	1	П
Urban 89.61	1.22	1.25	88.93	66.	1.04	90.39	1.57	1.55^{*}
Adult/child								
	1	1	88.4	1	1	81.2	1	П
Child 90.63	1.66^{*}	1.63**	89.44	1.11	1.3	92.28	2.77**	2.14^{**}
*p<.05								
**p<.01 OR = Odde Ratio								

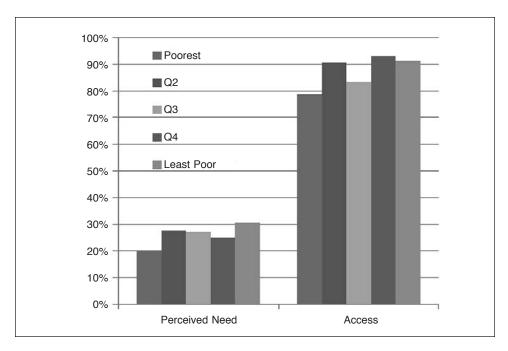


Figure 1. The gradient of perceived need and access to health care.^a

^aThe percentage of people with a "Perceived need" for health care, and the percentage of those reporting "Access" to health care shown separately by quintile of wealth.

not satisfactory and contributes to possible consumer's apathy towards the services. 47,72 The appalling conditions of service for health care professionals in resource-poor countries have amply been documented in literature. 73–78

It was shown (Figure 2) that those who accessed needed care did not access them from the same sources equally. The richest quintile accessed care as out-patients and the poorest accessed care at home. Interestingly, the poorest had the highest missing responses to this question. It is very likely that accessing care at home may have been self-medication, which is widespread in this part of the globe.^{79–82} Additionally, a good number of people patronise the traditional healing homes or herbalists.^{83–90} These local healers charge less than orthodox medical practitioners and are considered more knowledgeable for certain ailments. It is therefore not implausible that the poorest would opt for them. However, it has been reported that only one-fifth of the general population seek modern health care (orthodox medicine) in Burkina Faso,⁸⁶ a fact that alone speaks volumes.

In our study, men reported both more need and more access than women, but these differences were not statistically significant. However, gender has been reported to influence health, access to health care, and quality of care. A study that examined willingness to pay for community-based insurance found that men were more willing to pay than women. One might extrapolate from this that men were more likely also to pay out-of-pocket than women, and so should access more care. However, our results did not establish this as we found no significant difference between men and women.

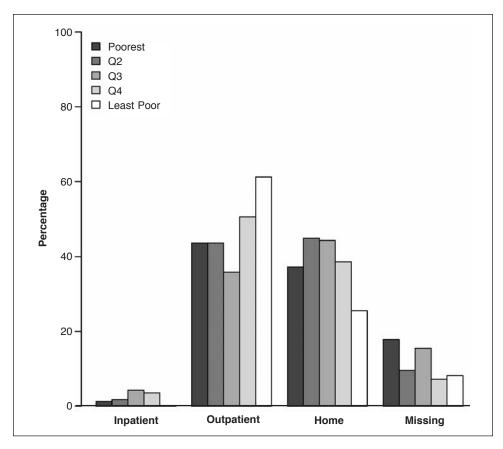


Figure 2. Percentage differences in the access to different sources of health care by quintile of wealth.

It is important to exercise a little bit of caution here. Willingness to pay could be a function of ability to pay. It may be that men are more able to pay than women and not that gender has any effect so to say on willingness to pay as such. This argument is supported by another study that reported that there was no significant difference in willingness-to-pay between men and women if they could read and write. ⁹² In other words, it could indeed be education that actually influences both ability and willingness to pay. Although illiteracy is widespread in Burkina Faso, the female illiteracy rate is higher than the male. ⁹² Our model did not include education and current job status.

Noteworthy is our finding that gender differences were found on such determinants for perceived need as socioeconomic status, marital status, age group, and setting. On access to health care, gender differences were observed with respect to socioeconomic status, marital status, setting, and adult/child relative need for and/or access to care. Even though one may tend to interpret the findings based on the cumulative response, it may be more useful to investigate findings in terms of locally prevalent gender norms. For example, females are more likely than males to have reported accurately on children's health and ill-health.

Those whose spouses had died reported more need for care than others even though they did not access more care. It is possible that predominantly being poor farmers, these people would not have enough money for health care when needed, being also encumbered by welfare of their children. In many African societies, widows are treated badly by the (extended) families of their deceased husbands. 93-95 In certain tribes in Uganda, Nigeria, and Burkina Faso, widows are not allowed to inherit anything from their husbands. 96 In Burkina Faso brothers-in-law may exclude their brother's widow from the household and its land.96 Widows are the most vulnerable in the society, and rank amongst the poorest. In fact, widowhood is emblematic of poverty. 93-95,97-99 They experience ostracism, violence, homelessness, ill health, and discrimination. Their daughters may suffer multiple deprivations, which increase their vulnerability to abuse. Most widows are homeless and may not be captured in national censuses. In fact, the numbers of widows as a percentage of the female population is not known in most developing countries, for which estimates vary widely.¹⁰⁰ Even poverty surveys may obscure inequities between individuals in a household; widows can actually live in poverty within relatively affluent households such as those which have been categorized as non-poor using PCA (as described earlier).

The link between ill health and poverty has long been established.¹⁰¹ It is therefore not surprising that widows reported more need than others, even though they didn't access the needed care. Cultural practices may require that a widow spends all the family's wealth seeking care for the dying husband and on the eventual funeral rites. Consequently, the family is dragged into indigence afterwards. Increasingly during the era of HIV/AIDS, this problem is becoming a concern, especially in the absence of any form of government-assisted programmes for the indigent.

In the present study, children were reported to have needed more care and to have accessed more care than adults, although previous work has reported that seeking professional care was similar for children and adults. One other previous studies have documented that adult members of the households were prioritized in allocation of resources for health care because they ensure household production by working in the farms. These studies were localized in coverage and so may not be as representative of Burkina Faso as our study sample.

For children, it was stated that a decrease in utilization of health care has double negative effect on their health status: negative externalities of the diseases to the community (in case of preventable diseases), and the progression of the disease to the detriment of the individual child. From our results, it appears as a good development for public health in Burkina Faso that this vulnerable group is being served. However, another study argued that when price of care is high or income low, people are less likely to think of themselves and their children as ill, especially when there is no likelihood of actually seeking care because of prohibitive health care costs or due to unavailability of health care services and facilities. It would therefore be safe in the interpretation of our findings that we err on the side of caution.

Policy implications. It has been stated that the user fee seems to be a relatively weak policy tool because it focuses on patients rather than on provider behaviours. ¹⁰⁵ This view is based on the assumptions that demand for health care is inelastic. That is, people's concern for their health is relatively insensitive to the changes in the cost of

care. However, a recent study found that user charges introduced in places at a time of deepening poverty have become great barriers to access for many, especially the less educated, women, and those who are economically disempowered. Another study, from China, found that some opportunity costs were inelastic (such as travel distance to facilities), but for direct costs price elasticity was higher, with the poorer people showing greater price sensitivity to cost than the wealthier people. The context of health care delivery appears to be a variable that requires closer examination in understanding the social gradients of demand and access. In Burkina Faso, there is a need to evaluate the cost-recovery efforts with access in mind, especially among the most poor.

This article raises more questions than it can answer. The results are from a cross-sectional study of one of the economically poorest countries in the world, and one of the data-poorest countries in the world. The results differ sufficiently from a *blanc mange* social-gradients perspective that they support a call for further research. Ideally a multi-disciplinary approach would be taken looking at individual and household level health care need, perceived need, and utilisation employing both epidemiological, anthropological, economic, and geographical perspectives. Longitudinal data from largely observational studies as well as studies of policy interventions would inform an understanding of the causal mechanisms involved.

The call for more research, however, should not mean that communities should have to wait for more research before seeing action to improve conditions. Exploring alternative methods for financing health care delivery that would not compromise access for those who need health care is certainly the way to achieve equity in health. ¹⁰⁸ Those alternatives include state-assisted (free or highly subsidized) health care packages for the poor. The challenge would then be to ensure that health care for the poor is not poor health care.

Notes

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