Prioritizing health problems in women in developing countries: comparing the financial burden of reproductive tract infections, anaemia and depressive disorders in a community survey in India

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Summary

OBJECTIVES   To compare the health care and opportunity costs of three common health problems [depressive disorders, reproductive tract infections (RTIs) and anaemia] affecting women and their associated risks of catastrophic health expenditure (defined *a priori* as out-of-pocket expenditure on health care exceeding 10% of the total monthly household income).

METHODS   Cross-sectional survey of 2494 women who consented to participate, from a randomly selected sample of 3000 women aged 18–50, living in the catchment area of a primary health centre in Goa, India. Depressive disorders were diagnosed with the Revised Clinical Interview Schedule; anaemia on the basis of a fingerprick sample of blood using the Haemocue system; and RTI using PCR, culture and microscopy with vaginal or urine specimens. Economic consequences were measured using the Costs of Illness Schedule and the WHO Disability Assessment Schedule. Health provision costs were calculated using previously derived unit costs for services for the main types of health care provider.

RESULTS   Catastrophic health expenditure, defined *a priori* as >10% of total household income spent out of pocket on health in the previous month, was reported by 138 women (5.5%; CI: 4.7–6.5%); they were more likely to report economic difficulties, such as having gone hungry in the past 3 months because of lack of money (OR 1.99, CI 1.1–3.6, $P = 0.02$). Only depressive disorder was associated with significantly higher health care costs, lost time costs and risk of catastrophic health expenditure (OR 2.66, CI 1.6–4.4, $P < 0.001$, after adjustment for possible sociodemographic confounders and other physical health problems). There was a linear association between the psychological morbidity score (arranged into quintile groups) and the risk of catastrophic health expenditure (adjusted).

CONCLUSIONS   If economic arguments were considered a key driver for global health policy, then depressive disorder should be considered a major health priority for women in developing countries.

keywords women, developing countries, costs of illness

Introduction

Health problems that disproportionately affect the poor and can be managed with locally available and affordable treatments would be expected to command a greater priority in health policy in developing countries (Musgrove 1999; Hauck *et al.* 2004). One important indicator of the financial burden of ill health on households is the concept of out-of-pocket expenditure on health, which above a variably defined proportion of total household income has been labelled 'catastrophic' (Xu *et al.* 2003). The study described in this article was nested within a population-based study of women's health in India; it aimed to

examine the costs associated with three common health problems affecting women in developing countries, viz. anaemia, reproductive tract infections (RTIs) and depressive disorders. These three problems have been identified as major contributors to the burden of disease in women in the reproductive age groups (World Health Organization 2005). They share the characteristics that they are relatively frequent in the general population, more common in women, typically present in primary care where they are most often not detected, and more common among the poor (Wasserheit & Holmes 1992; International Institute for Population Sciences 2001; Patel & Kleinman 2003; Sloan *et al.* 2003; Patel *et al.* 2006).

Findings relating to the determinants of depressive disorders and RTIs have previously been reported (Patel *et al.* 2006). In this article, we compare the costs associated with each of these three health problems; in particular, we present estimates of health care, time and out-of-pocket costs associated with each. We also compare the three health problems in terms of the risk to the women's household of the health problem resulting in catastrophic health expenditure and identify characteristics that are associated with this increased risk.

Method

Setting and sample

The study was located in the state of Goa on India's west coast (population 1.4 million). The main language is Konkani. The study population was women aged 18–45 years living in the catchment area of the Aldona Primary Health Centre of north Goa district (*n* = 8595). The area includes nine villages and an area bordering a National Highway. Three thousand women were randomly selected from the sampling frame (the population registers maintained by the health department). The eligibility criteria for recruitment were age 18–50 years (as the enumeration registers were up to 4 years old in some villages); residence in the area for the next 12 months (so as to enable participation in the longitudinal component of the study); not suffering from cognitive impairment which would make responding to the interview and giving informed consent difficult; and not being currently pregnant (because of the invasive research methods involved, see below). If the randomly selected woman did not meet all these criteria, or if the woman was no longer living in the area, then the researcher was instructed to replace the woman using *a priori* criteria (Patel *et al.* 2006). Eligible women who refused to participate were not replaced. Recruitment took place from November 2001 to May 2003.

Data collection and definitions

The mandatory requirements for the participation in this study were a face-to-face interview with a trained researcher (which included a diagnostic interview for common mental disorders) and the collection of biological samples for the diagnosis of anaemia (fingerprick sample of blood) and RTIs (vaginal and/or urine specimens). The study employed a semistructured interview, which was a composite of questions eliciting data on different aspects of the woman's personal and health history, derived from a number of sources cited below.

The data collected from the participants were organized in the following manner.

Information on residence, age, education, religion and marital status was collected from all participants, including those who refused to participate further in the study. Data were collected from participants on the type of housing, access to water and sanitary facilities, household composition, employment status, indebtedness, the experience of hunger because of lack of money and the perception of difficulties in making ends meet. We systematically collected data on household income by listing each member of the household (including the respondent) and the average income of the past 3 months. These questions were derived from interviews used in previous studies in Goa (Patel *et al.* 1998a; International Institute for Population Sciences 2001).

To detect anaemia, fingerprick blood samples were collected by trained field workers, and haemoglobin levels were measured with the Hemocue system, which gives results comparable to estimates of sophisticated laboratory methods (Krenzischeck & Tanseco 1996). A woman was considered to have anaemia if her haemoglobin was below 11 g/dl, or severe anaemia if it was below 8 g/dl.

For women who consented to a gynaecological speculum examination (*n* = 1398), two high vaginal (for PCR) and two vaginal swabs (for smears and culture) were collected. For women who did not consent, first-void urine specimens were collected *in lieu* of the high vaginal swabs and self-administered vaginal swabs for smears and culture. The use of self-administered swabs is a feasible and reliable method of collection of specimens for the diagnosis of RTIs (Tanksale *et al.* 2003). The diagnosis of RTIs was established using the following gold standard tests (Meehan *et al.* 2003): for chlamydial and gonococcal infections, PCR using the Roche Amplicor system; for *Trichomonas vaginalis*, culture using the InPouch TV Culture Kit; for bacterial vaginosis, the reading of Gram-stained slides based on Nugent's score (Nugent *et al.* 1991) and for candidiasis, the reading of Gram-stained slides using a rating of the density of yeast cells seen per high power field. RTIs were treated as a composite variable of any RTI or any sexually transmitted infection (STI) (chlamydia, gonorrhoea and trichomoniasis).

Depressive disorders (including comorbid anxiety disorders) were measured using the Revised Clinical Interview Schedule (CISR), a structured interview for lay interviewers (Lewis *et al.* 1992). The CISR has been widely used in developing countries; the Konkani version used in the present study was field tested for use in Goa (Patel *et al.* 1998b). The CISR consists of scoring questions organized in 14 symptom domains. The sum of the scoring questions generates a total score (range 0–57), which is a measure of

non-psychotic psychiatric morbidity; scores of 12 or more indicate case-level morbidity. Data can also be entered in a computer algorithm to generate ICD-10 diagnoses.

The presence of other physical health problems was based on self-report of the presence of a 'long-standing illness or disability'. Participants who responded positively were asked about the nature of the illness.

The *Costs of Illness Schedule* was developed for economic analyses of health problems in developing countries (Chisholm *et al.* 2000) and used in a trial for the treatment of common mental disorders in Goa (Patel *et al.* 2003). Specific components of the inventory elicit data on the following.

- *Outpatient consultations* over the previous 1 month covering five types of health care providers: private doctors, primary health centre doctors, hospital doctors, nurses or community health workers and traditional healers. For each type, we elicited data on number of consultations in the previous month, the average costs of return travel, average time taken to travel, average time waiting to be seen, duration of the consultation and any out-of-pocket expenditure.
- *Hospital admissions* in the previous 3 months: data were elicited on admissions to private and public hospitals, including number of nights and any out-of-pocket expenditure.
- *Biomedical investigations* such as radiological or haematological tests, in the previous 3 months, including out-of-pocket charges for any of these.
- *Medications* in the past 3 months: a list of all medications taken was prepared, by collecting actual medications taken and/or prescriptions, and listing out-of-pocket expenditure on any medication.
- Costs incurred as a result of *religious or traditional treatments*, such as religious retreats, in the previous 3 months, including travel costs.
- *Carer costs*: whether a family member or friend had to stop or reduce usual work or activities because of their ill health in the previous 3 months.

The *number of days disabled* from undertaking usual work or household activities in the previous month was assessed using the 12-item Disability Assessment Schedule, which has been previously used in Goa (Von Korff *et al.* 1996; Patel *et al.* 1998a).

Related *health provision costs* were calculated using unit costs derived in a previous study (Patel *et al.* 2003) for services provided by each of the five types of health care provider. These were based on the estimation of the full, 1-year costs of personnel, revenue, overhead and capital (a discount rate of 5% was applied to land and buildings, 10% for equipment and vehicles). Costs of face-to-face

contacts with individual health professionals were adjusted for the ratio of time they spent with patients compared with other activities.

The economic consequences of ill health were examined using four outcome measures calculated for each woman, based on average costs (in Indian rupees) incurred per month in the previous 3 months.

- *Aggregated health care costs* incurred through outpatient visits, hospital admissions, treatment, medications and investigations, including costs incurred by the health provider (s).
- *Aggregated lost time costs* to the woman and her family including the cost of lost days of work because of disability and informal care-giving time by relatives/friends, and travel costs and time spent travelling to/waiting for consultations. For those in regular employment, the actual income was used to calculate lost income. For others (mainly students and homemakers), a conservative value of Rs 2000/month (Rs 100×20 working days) was used.
- *Out-of-pocket costs*, a subset of the previous two costs, which comprised all direct payments for health care by the woman or her family, including expenses for travel to health care facilities.
- Whether or not there was *catastrophic health expenditure*, defined *a priori* as 10% or more of the monthly household income spent on health care; this proportion has been used in a recent study from India, which considered 10% to be the limit that families could bear without severe adverse economic consequences (Ranson 2002). The proportion of household income spent on health care was computed by dividing the average monthly out-of-pocket costs related to health care by the average monthly household income. The latter was calculated by summing the average income over the previous 3 months of all members of the household.

Ethical issues

The study proposal had received ethical approval from the Ethics Review Board of the London School of Hygiene and Tropical Medicine and from the Independent Ethics Commission, Mumbai (India). Each selected woman was sent an information brochure on the project; a visit was scheduled to the woman's home after this at which time consent was obtained. Women who were found to suffer from severe depression, anaemia or RTIs were offered free care by the study clinical staff.

Analysis

All analyses were carried out using Stata 8. Mean monthly aggregated health care, lost time and out-of-pocket costs were calculated for the three subgroups of women suffering from each of the three health problems (the cases): anaemia, RTIs and depressive disorders, and compared with corresponding mean monthly costs of women not suffering from the particular health problem (the non-cases). As cost data are highly skewed and health planning requires estimates of mean costs (Thompson & Barber 2000) (and not some transformed version, such as geometric mean costs), non-parametric confidence intervals for the difference between mean values were estimated using bootstrapping techniques and the percentile method based on 1000 bootstrap samples (Kirkwood & Sterne 2003).

The fourth outcome, catastrophic health expenditure was coded as present/absent. First, the association of each socioeconomic factor with the outcome was estimated, and a multivariate model was built by including those factors with $P < 0.05$, or whose associations were high (OR > 2) in the univariate analyses, and then retaining only those whose P-values remained at $P < 0.05$. Next, the association of catastrophic health expenditure with each of the three health problems was assessed by comparing the case and non-case subgroups of women, first in univariate analyses, and then adjusting for the socioeconomic factors identified in the multivariate model above.

Results

Of the 3000 randomly selected women, 2494 consented to participate in the study (83.1%). Nine hundred fifty-seven (38.4%) participants were replacement subjects; the commonest reason for replacement was that the selected woman was no longer resident (41.7%). Details of the sampling procedure are described in our other publications (Patel *et al.* 2006). Data on costs and mental health status were available for all women. However, data on household income was not available for two women (who did not know the income of members of their household). The number of missing values for specific RTI diagnoses ranged from 6 (0.2%) for trichomoniasis to 71 (2.8%) for *Chlamydia trachomatis* infection, mainly because of inadequate samples or the presence of inorganic ions that interfered with the PCR process. We had 11 missing values for haemoglobin estimations because of inadequate blood samples.

We established the following rates of prevalence for the index conditions: depressive disorders, 6.6% ($n = 164/2494$; 95% CI 5.7–7.6%); RTI, 28.3% ($n = 672/2379$; 95% CI 26.4–30.1%); STI, 4.2% ($n = 101/2414$; 95% CI 3.4–5.0%) and anaemia, 18.7% ($n = 465/2483$; 95% CI 17.1–20.3%). Only a small minority of anaemic women had severe anaemia (35/465). Two hundred and ninety-four participants reported a long-standing illness or disability; 287 of them described the nature of this illness: the most common illnesses were cardiovascular diseases (101), diabetes (25) and spinal or back disorders (25).

Mean costs

Table 1 presents the mean monthly aggregated health care, lost time and out-of-pocket costs for women suffering from each of the three health problems, compared with the costs for women not suffering from each particular health problem. The mean costs for women with depressive disorders are considerably higher than those for women with anaemia or RTIs, and also greater than those for women without depressive disorders. There are no significant differences in health care, lost time or out-of-pocket

Table 1 Comparisons of mean monthly costs (Indian rupees) associated with three common health problems

	Depressive disorders	Reproductive tract infections	Anaemia
Aggregated health care costs			
Mean monthly costs of cases (SD)	137.39 (361.4)	83.57 (303.9)	63.60 (192.6)
Excess compared with non-cases* (95% CI)†	52.57 (1.9–112.8)	−3.74 (−7.6 to 1.2)	−30.58 (−54.1 to −7.2)
Aggregated lost time costs			
Mean monthly costs of cases (SD)	151.90 (464.9)	29.50 (171.6)	52.99 (289.2)
Excess compared with non-cases* (95% CI)†	122.78 (53.1–192.7)	−1.78 (−4.4 to 1.3)	19.33 (−7.6 to 46.0)
Total out-of-pocket costs, including travel			
Mean monthly costs of cases (SD)	92.64 (247.5)	64.27 (260.6)	59.22 (192.7)
Excess compared with non-cases* (95% CI)†	26.72 (−9.1–69.4)	−2.84 (−5.9 to −0.06)	−10.54 (−31.6 to 11.3)

*A negative excess means the mean costs were lower for cases than non-cases. †95% CI calculated using bootstrapping techniques with 1000 bootstrap samples.

costs between women with and without RTI; however, aggregated health care costs were significantly *lower* for women with anaemia than for women without anaemia. Subgroup analyses comparing women with severe anaemia with non-anaemic women or women with STI with women without STI did not find any differences.

Catastrophic health expenditure

The monthly out-of-pocket expenditure of 138 women (5.5%; CI 4.7–6.5%) exceeded 10% of their total monthly household income. Twenty three women had spent between 25% and 50% of the household income on health care, and 34 women (1.4%; CI 0.9–1.9%) had spent more than 50%. Women categorized as having catastrophic health expenditure were more likely to report economic difficulties. Thus, 9.4% reported having gone hungry in the past 3 months because of lack of money, compared with 5% of other women (OR 1.99, CI 1.1–3.6, $P = 0.02$); 48.5% reported having current difficulties making ends meet, compared with 30.9% of other women (OR 2.11, CI 1.5–3.0, $P < 0.001$) and 39% reported that their families were in debt at present, compared with 33.7% of other women (OR 1.25, CI 0.9–1.8, $P = 0.2$).

Association of sociodemographic factors with catastrophic health expenditure

Table 2 presents the associations between sociodemographic factors and the risk of catastrophic health expenditure. On univariate analyses, older age, being a replacement subject, low education and illiteracy, being Christian, smaller household size and being widowed/divorced (against being married) were significantly associated with catastrophic health expenditure. After adjustment, the following variables remained significantly associated with catastrophic health expenditure: older age (OR 1.15, CI 1.0–1.3, associated with each increasing category of age, P for trend = 0.02), being illiterate (OR 1.65, CI 1.1–2.5, $P = 0.02$) and being Christian (compared with being Hindu; OR 1.50, CI 1.0–2.2, $P = 0.04$) were associated with increased risks. Being a replacement subject (0.65, 0.4–1.0, $P = 0.03$) and larger household size (OR 0.60, CI 0.5–0.8, associated with each increasing category of household size, P for trend < 0.001) were associated with lower risks.

Association of common health problems with catastrophic health expenditure

Table 3 reports the unadjusted and adjusted associations of the three common health problems with catastrophic

health expenditure. It shows that only depressive disorders were associated with an increased risk (odds) of catastrophic health expenditure. This association remained strong after adjustment for other physical health problems, viz. anaemia, RTI and self-report of a long-standing illness or disability, in addition to socioeconomic factors (OR 2.66, CI 1.6–4.4, $P < 0.001$). There was a linear association between the psychological morbidity score (categorized into quintile groups) and the risk of catastrophic health expenditure (adjusted OR 1.47, CI 1.3–1.6, P for trend < 0.001). Depressive disorders were also significantly associated with out-of-pocket expenditure exceeding 50% of the household income (adjusted OR 3.45, 1.4–8.4, $P = 0.006$).

Discussion

We describe the costs associated with anaemia, RTIs and depressive disorders, three common health problems affecting women in developing countries. Only depressive disorders were associated with significantly higher health care, lost time and out-of-pocket costs. Women with depressive disorders were also significantly more likely to have experienced catastrophic health expenditure on health in the previous month.

The proportion of households facing catastrophic payments from out-of-pocket health expenses varies widely between countries. Three key pre-conditions for catastrophic payments were identified in a recent WHO multi-country analysis: the availability of health services requiring payment, low capacity to pay and the lack of pre-payment or health insurance (Xu *et al.* 2003). These conditions are specifically significant in India where over 70% of health care now takes place in the for-profit private sector (Kawabata *et al.* 2002; Ranson 2002). On the basis of our *a priori* definition (Ranson 2002), just over 1 in 20 women had experienced catastrophic health expenditure. There was a strong association between catastrophic health expenditure and indicators of acute economic difficulties, notably hunger because of lack of money to buy food in the past 3 months and the experience of difficulty in making ends meet in recent days. Poorer and less educated women were more likely to incur catastrophic health expenditure. Thus, poorer households are more likely to experience catastrophic health expenditure, confirming the recent WHO multicountry analysis findings (Xu *et al.* 2003). Older age was probably associated with catastrophic health expenditure because of the greater risk of chronic diseases, including depressive disorders, with older age. Larger household size was a protective factor, perhaps because of the greater support from household members, which leads to a reduced reliance on private health care.

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Table 2 Association of socioeconomic factors with catastrophic health expenditure (*n* = 2492 unless otherwise specified)

Factor	Proportion in sample, *n* (%)	Prevalence of catastrophic health expenditure, *n* (%)	OR (95% CI)	*P*-value
Age (years)				
18–24	504 (20.2)	18 (3.6)	1	<0.001*
25–29	459 (18.4)	17 (3.7)	1.04 (0.5–2.0)	
30–34	499 (20.0)	25 (5.0)	1.42 (0.8–2.6)	
35–39	472 (18.9)	39 (8.3)	2.43 (1.4–4.3)	
40–50	558 (22.4)	39 (7.0)	2.03 (1.1–3.6)	
Subject type				
Random	1535 (61.6)	99 (6.4)	1	0.01
Replacement	957 (38.4)	39 (4.1)	0.62 (0.4–0.9)	
Language				
Konkani	2088 (83.8)	110 (5.3)	1	0.2
Marathi	404 (16.2)	28 (6.9)	1.34 (0.9–2.0%)	
Education (years)				
None	240 (9.6)	21 (8.7)	1	0.01*
1–9	995 (39.9)	57 (5.7)	0.63 (0.4–1.1)	
10–14	989 (39.6)	51 (5.2)	0.57 (0.3–0.96)	
15–23	269 (10.8)	9 (3.3)	0.36 (0.2–0.8)	
Literate				
Yes	2137 (85.7)	107 (5.0)	1	0.005
No	355 (14.2)	31 (8.7)	1.81 (1.9–2.7)	
Ethnicity				
Goan	2246 (90.1)	123 (5.5)	1	0.7
Migrant	246 (9.9)	15 (6.1)	1.12 (0.6–1.9)	
Religion				
Hindu	1858 (74.6)	88 (4.7)	1	
Christian	553 (22.2)	44 (7.96)	1.74 (1.2–2.5)	0.004
Muslim	81 (3.2)	6 (7.4)	1.6 (0.7–3.8)	0.3
Occupation				
Homemaker	1661 (66.6)	99 (5.96)	1	
Employed	521 (20.9)	28 (5.4)	0.896 (0.6–1.4)	0.6
Others	310 (12.4)	11 (3.5)	0.58 (0.3–1.1)	0.09
Marital status				
Married	1748 (70.1)	100 (5.7)	1	
Single	665 (26.7)	29 (4.4)	0.75 (0.5–1.1)	0.2
D/W/S†	79 (3.2)	9 (11.4)	2.1 (1.0–4.4)	0.04
Husband literate (*n* =1746)				
No	1584 (90.6)	85 (5.4)	1	0.04
Yes	162 (9.3)	15 (9.3)	1.80 (1.0–3.2)	
Household size				
1–3	417 (16.7)	40 (9.6)	1	<0.001*
4–5	1338 (53.7)	74 (5.5)	0.5 (0.4–0.8)	
6–9	648 (26.0)	22 (3.4)	0.33 (0.2–0.6)	
10–17	89 (3.6)	2 (2.2)	0.22 (0.0–0.9)	
Number of children in household				
None	659 (26.4)	32 (4.9)	1	0.3*
1	620 (24.9)	33 (5.3)	1.10 (0.7–1.8)	
2	754 (30.3)	45 (5.97)	1.24 (0.8–2.0)	
>3	459 (18.4)	28 (6.1)	1.27 (0.7–2.1)	

*For trend.
†Divorced/widowed/separated.

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Table 3 Association of specific disorders with catastrophic health expenditure

Health problem	% with catastrophic health expenditure	Crude OR (95% CI)	Adjusted OR* (95% CI)
Depressive disorders			
Cases (*n* = 164)	14.6	3.32 (2.1–5.3)	2.99 (1.8–4.9)
Non-cases (*n* = 2328)	4.9	*P* < 0.001	*P* < 0.001
Reproductive tract infections			
Cases (*n* = 672)	6.4	1.22 (0.8–1.8)	1.15 (0.8–1.7)
Non-cases (*n* = 1705)	5.3	*P* = 0.3	*P* = 0.5
Sexually transmitted infections			
Cases (*n* = 101)	7.9	1.47 (0.7–3.1)	1.19 (0.5–2.7)
Non-cases (*n* = 2311)	5.5	*P* = 0.3	*P* = 0.7
Anaemia			
Cases (*n* = 463)	5.4	0.97 (0.6–1.5)	0.94 (0.6–1.5)
Non-cases (*n* = 2018)	5.5	*P* = 0.9	*P* = 0.8

*Adjusted for age, literacy, religion, subject replacement status, other disorders and household size.

Depressive disorders were strongly associated with adverse economic consequences, reflected in the significantly higher mean health care costs, time costs and out-of-pocket costs, as well as a greater risk of catastrophic health expenditure. Women who were depressed were three times more likely than other women to have spent more than half their monthly household expenditure on out-of-pocket health care costs in the previous month. However, neither anaemia nor RTIs were associated. We think that the main reason for depressive disorders being associated with higher costs is that it is a profoundly disabling disorder characterized by distressing somatic and psychological symptoms (Ormel *et al.* 1994). As a consequence of this distress, depressive disorders are associated with a high level of help-seeking; however, most patients tend to complain only of the somatic complaints (Raguram *et al.* 1996). Most psychological morbidity in general health care thus goes undetected and is inappropriately treated with unnecessary medication (Linden *et al.* 1999; Wessely *et al.* 1999; Patel *et al.* 2001). In contrast, RTI and anaemia are often asymptomatic and, when diagnosed, can be treated effectively.

Our study has a number of limitations. There are inaccuracies inherent to research which employs self-reporting for the estimation of costs of illness (Ranson 2002). However, we do not think there would be a systematic bias associated with any of the specific health problems. Secondly, it is plausible that the higher costs of care associated with depressive disorders were due to confounding factors such as physical illness. Thirdly, reverse causality is a possibility; thus, depressive disorder may be the consequence rather than the cause of catastrophic health expenditure because of some other, unmeasured, factor. However, the short period of

assessment of the exposure and cost outcomes, and the persistence after adjustment for age and self-report of a chronic illness suggest that these factors were unlikely explanations for the association. Finally, our study findings may be subject to a selection bias because of the replacement and refusal rates.

Our study is the first to compare, at the level of the population, the costs associated with three common conditions affecting women in developing countries. We found that depressive disorders exert the strongest adverse economic consequences of the three disorders. Although, as with any cost of illness study, our findings are not generalizable beyond the population studied, our main finding of the strong, independent, association of depression with higher costs of illness are likely to hold well. Indeed, our findings are similar to costs of illness studies from developed countries (Croft-Jefferys & Wilkinson 1989; Broadhead *et al.* 1990). Our study highlights the need for mental health care, which is mostly provided in primary care, to be covered by pre-payment and community financing schemes advocated to reduce the impact of out-of-pocket payments for health care (Kawabata *et al.* 2002). The strong association between poverty and depression, which has been reported in a number of population-based studies in developing countries (Patel & Kleinman 2003), is likely to be explained both by the greater risk of suffering depression in situations of deprivation and by the higher spending for health care in depressed persons. It is not surprising then that the efficacious treatments of depressive disorders are also cost effective, reducing overall health care costs (Patel *et al.* 2003). Thus, depressive disorders pose a major economic burden on the lives of poor women in developing countries; they bear a disproportionate burden of the disorder, which

in turn exacts a disproportionate impact on their livelihoods. If economic arguments were considered a key driver for global health policy, then depressive disorder should rightly be considered a major health priority for women in developing countries.

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Priorité des problèmes de santé chez les femmes dans les pays en développement: Comparaison des charges financières dues aux infections du tractus reproducteur, à l'anémie et aux troubles dépressifs dans une étude de communauté en Inde

OBJECTIFS   Comparer les coûts des soins de santé et des opportunité de trois problèmes courants de santé (états dépressifs, infections du tractus reproducteur et anémies) affectant les femmes, et les risques de dépense catastrophiques de santé associés avec ceux-ci, définis *a priori* comme des dépenses excédentaires sur les soins de santé dépassant 10% du total des revenus mensuels des familles.

MÉTHODE   Etude transversale sur 2494 femmes consentantes dans un échantillon de 3000 femmes de 18 à 50 ans sélectionnées, vivant dans la zone de capture d'un centre de soin de santé primaire à Goa en Inde. Les états dépressifs ont été diagnostiqués suivant le 'Revised Clinical Interview Schedule' (Procédé d'Interview Clinique Révisé), l'anémie a été détectée sur des échantillons de goutte sang du doigt en utilisant le système Haemocue et les infections du tractus reproducteur par la PCR, la culture et la microscopie d'échantillons vaginaux et d'urine. Les conséquences économiques ont été mesurées en utilisant le Procédé des Coûts de Maladie et le Procédé de l'OMS pour l'Analyse des Incapacités. Les coûts de santé ont été calculés en utilisant des unités de coûts provenant d'études précédentes calculés pour les services procurés les principaux types de procureurs de soins de santé.

RÉSULTATS   Des dépenses catastrophiques de santé, i.e. définies *a priori* comme >10% des revenus totaux des familles dépenses pour la santé durant le mois précédant ont été rapportées par 138 femmes (5,5%, IC95%: 4,7–6,5), elles étaient plus susceptibles à rapporter des difficultés économiques telles que la souffrance de la faim durant les trois derniers mois à cause du manque d'argent (OR = 1,99, IC: 1,1–3,6, P = 0,02). Seuls les états dépressifs étaient associés avec des coûts élevés de soins de santé et de la perte de temps et au risque de dépense catastrophique pour la santé (OR = 2.66, IC:1,6–4,4, P < 0.001, après ajustement pour de possibles aspects sociodémographiques et autres problèmes de santé physique). Il y avait une relation linéaire entre le score de morbidité psychologique (regroupé par quintiles) et le risque de dépense catastrophique pour la santé (ajusté).

CONCLUSIONS   Si des arguments économiques étaient considérés comme étant un leader clé dans la politique globale de santé, les états dépressifs devraient alors être considérés comme une priorité majeure chez les femmes dans les pays en développement.

mots clés femmes, pays en développement, coûts de la maladie

Estableciendo prioridades en los problemas de salud de las mujeres en países en vías de desarrollo: comparación de la carga económica de las infecciones del tracto reproductor, la anemia y los desórdenes depresivos en un estudio comunitario en India

OBJETIVOS   Comparar los cuidados sanitarios y el coste de oportunidad de tres problemas comunes de salud (desórdenes depresivos, infecciones del tracto reproductor – ITR - y anemia) que afectan a las mujeres, y los riesgos asociados al gasto sanitario catastrófico (definido *a priori* como gasto de bolsillo en salud que excede el 10% del total de ingresos mensuales del hogar).

MÉTODOS   Estudio croseccional con 2494 mujeres que dieron su consentimiento para participar, de una muestra elegida al azar de 3000 mujeres, con edades comprendidas entre los 18 y 50 años, viviendo en el área de un centro de atención primaria en Goa, India. Los desórdenes depresivos se diagnosticaron utilizando la versión revisada del instrumento de entrevista clínica psiquiátrica semiestructurada; la anemia se diagnosticó utilizando una muestra de sangre capilar, tomada mediante punción en el dedo, y analizada en un sistema Hemocue; y las ITR mediante PCR, cultivo y microscopía, con muestras vaginales o de orina. Las consecuencias económicas se calcularon utilizando la plantilla para el Costo de la Enfermedad (*Costs of Illness Schedule*) y la escala de Discapacidad de la OMS. Los costes de la provisión de servicios sanitarios se calcularon utilizando unidades de coste previamente derivadas para los principales tipos de proveedores de salud.

RESULTADOS   Ciento treinta y ocho mujeres (5.5%; IC 4.7–6.5%) reportaron haber tenido gastos catastróficos, es decir >10% de los ingresos totales del hogar gastados como dinero de bolsillo en salud durante el mes anterior; era más común que reportasen dificultades económicas, como el haber pasado hambre en los últimos tres meses debido a falta de dinero (OR 1.99, IC 1.1–3.6, $P = 0.02$). Solo los desórdenes depresivos estaban asociados con costos sanitarios y por tiempo perdido significativamente más altos, y el con riesgo de gasto catastrófico (OR 2.66, IC 1.6–4.4, $P < 0.001$, después de ajustes por posibles factores de confusión sociodemográficos y otros problemas de salud física). Existía una asociación linear entre la puntuación de morbilidad psicológica (organizados por quintiles) y el riesgo de gasto catastrófico en salud (ajustado).

CONCLUSIONES   Si se consideran los argumentos económicos como un impulsor clave de las políticas de salud global, los desórdenes depresivos deberían considerarse como una de las principales prioridades de salud de las mujeres en países en vías de desarrollo.

palabras clave mujeres, países en vías de desarrollo, costo de la enfermedad