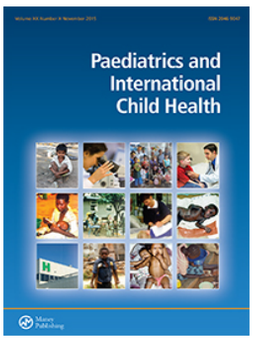

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Paediatrics and International Child Health

ISSN: 2046-9047 (Print) 2046-9055 (Online) Journal homepage: http://www.tandfonline.com/loi/ypch20

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To cite this article: Suchismita Mishra, Yadlapalli S. Kusuma & Bontha V. Babu (2016): Treatment-seeking and out-of-pocket expenditure on childhood illness in a migrant tribal community in Bhubaneswar, Odisha State, India, Paediatrics and International Child Health, DOI: 10.1080/20469047.2016.1245031

To link to this article: http://dx.doi.org/10.1080/20469047.2016.1245031

Treatment-seeking and out-of-pocket expenditure on childhood illness in a migrant tribal community in Bhubaneswar, Odisha State, India

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Background: In India, migrant status, tribal affiliation and poverty render tribal migrants more vulnerable than any other group which leads to high treatment costs and the risk of low access to health care.
Objective: To examine treatment-seeking behaviour and out-of-pocket (OOP) expenditure on the treatment of childhood illnesses, with a focus on gender in a migrant tribal community in Bhubaneswar, eastern India.
Methods: A total of 175 households with a child aged 0–14 years and who had migrated within the last 12 years were selected from tribal-dominated slums. Data on health-seeking behaviour and expenditure on a recent illness in the youngest child were collected by interviewing mothers during October 2007 to March 2008.
Results: Of the 175 children, 78.8% had at least one episode of illness during the previous year. Of the total number of episodes, 71% had been treated and 61% of them had incurred OOP expenditure. A significantly lower proportion of episodes of illness in girls had been treated than in boys ($P = 0.01$) and incurred OOP expenditure ($P = 0.05$). Private health care was preferred and only 16.5% availed themselves of the government sources. About 89 and 87% of households of boys and girls, respectively, incurred OOP expenditure. A child's gender (female) ($P = 0.05$), mother's education ($P = 0.002$) and type of illness ($P = 0.002$) were significantly associated with total OOP expenditure.
Conclusion: Further studies are warranted to address the low access to government health care and thereby reduce high OOP expenditure by tribal migrants on low incomes. Efforts are required to increase the ability of communities and health providers to identify and address the issues of gender and equity in health care along with a focus on culture-sensitive service provision.

Keywords: Migration, Health care-seeking behaviour, Treatment costs, Out-of-pocket expenditure, Gender

Introduction

Currently, 31.2% of India's population is urban, 50 cities have populations of over one million, and about 17% of urban households are in slums.[1] The health indicators in slum populations are much poorer than urban averages and similar or even worse than those of rural populations.[2] Children living in urban slums are exposed to the risk of infectious diseases,[3] malnutrition[4] and possibly impaired cognitive development.[5] Overall child morbidity and mortality rates are many times higher in slums than in more privileged urban neighbourhoods.[6]

Internal migration is an important livelihood strategy in India. Tribal migrants are often in poorly remunerated jobs, principally in the informal sector, and suffer from various deprivations and handicaps, which also have to do with the nature of urban policies and an absence of employer support.[7] The changing pattern of urban tribal societies and their vulnerability owing to migration leads to inequities in health and access to health care. In several Indian cities, the infrastructure and manpower are insufficient to cater for the needs of the growing migrant population.[8] In addition, the public health system has not taken account of the specific needs of the migrant population in designing services which are therefore not migrant-sensitive.[9]

Gender, one of the major social determinants of health, influences access to health care and gender disparities are greater amongst the poor.[10] Some studies have demonstrated that the status of women in tribal societies is better in that girls are treated almost equally to boys and that this is apparent from birth.[11] However, migration and contact with other cultures might affect attitudes to gender and child-care-seeking behaviour.[12]

Before migrating, tribes enjoy a cultural identity. Familiarity with an area and its facilities enables them to access well structured government health-care services.[8]

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DOI 10.1080/20469047.2016.1245031

However, in general, the health of and access to health care of tribal populations is very poor.[13] Migration to a new socio-cultural urban environment makes them more vulnerable and this leads to a failure to access public health-care services, and, thus, most of those who are underprivileged seek care from a variety of private health-care providers,[14] which means high treatment costs.[15] Hence, it is important to understand the treatment-seeking behaviour and pattern of household costs, referred to as out-of-pocket (OOP) expenditure. This paper aims to report treatment-seeking behaviour in migrant tribal families and to estimate OOP expenditure on treating childhood illnesses, with a focus on gender at the household level.

Subjects and methods

Study area

The study was undertaken in the capital city of Odisha, Bhubaneswar, which has a population of 837 737.[1] There are 436 slums, 116 of which are authorised and 220 unauthorised. About 37% of the city's population live in these slums, and 67% of them are migrants.[16] The city maintains 1 municipal hospital, 6 allopathic dispensaries and 11 homeopathic dispensaries. In addition, 1 state capital hospital and 17 primary health care centres are run by the state government, and there are several private clinics and hospitals.

Study participants and research methods

After a pilot study, tribal-dominated slums were identified and four were selected on the basis of the predominance of a tribal community. Most of these people are of the Santal tribe and have migrated from the hilly, forested areas of the Mayurbhanj district in Odisha State, and a few are from its neighbouring districts and have been in the city for the past 20 years. Households in the four slums were selected according to the following criteria: (i) the family had migrated within the last 12 years, and (ii) had a child aged 0–14 years. Altogether, 175 households met these criteria during the survey (October 2007 to March 2008). Data were collected through semi-structured interviews with the mothers by the first author. The mother tongue of this community is *Santali,* but a majority knew Odiya, the local state language. If the participant could not understand Odiya, another family member or neighbour who could speak both languages served as translator. Data on socio-economic status, demographic characteristics, details of recent illnesses in the youngest child during the past year including health care-seeking behaviour and health care expenditure were collected. The questionnaire was initially developed in English and translated into Odiya. It was pre-tested in a slum with some tribal households, but this was not included in this study.

Statistical analysis

Data were computerised and analysed using SPSS version 20.0. Various proportions and other descriptives relating to treatment-seeking behaviour and OOP expenditure were estimated. Univariate and multivariate analyses were undertaken to determine the influence of socio-economic and demographic variables on OOP. The dependent variable was total OOP expenditure and independent predictors were child gender, child age (<1, 2–5 and >5 years), monthly family income (≤INR 2000, INR 2001–4000 and >INR 4000), duration of family's stay in the city (1–3, 4–6, 7–9 and 10–12 years), mother's education, father's education (illiterate/no schooling, 1–5 years, 6–10 years and >10 years of schooling), mother's number of children and type of illness (wounds/skin diseases, measles, respiratory infections, fever, diarrhoeal diseases and other illnesses). Income and expenditure were recorded in Indian rupees (INR). Approximately INR 1 was equivalent to US$ 0.025. Analysis of variance (ANOVA) was used for univariate analysis. The effect on OOP expenditure of all predictor variables was assessed by multiple regression through backward elimination.

Results

Of the 175 children, 138 (78.8%) had at least one episode of illness in the last 12 months and treatment had been sought in 127 (72.6%) cases (Table 1). In all, 209 episodes occurred in 175 children (1.2 illnesses per child). While 71% of episodes were treated, OOP expenditure was incurred for 61% (67.6% in boys, 54% in girls). Gender differences were significant: treatment was sought ($P = 0.01$) and OOP expenditure ($P = 0.05$) was incurred for girls in a much lower proportion of illness episodes compared with boys.

In both genders, diarrhoea was prevalent (44.9%), followed by malaria (23.2%) and respiratory infections (17.4%) (Table 2). Most children were treated in private health facilities (62.5% boys, 56.4% girls), and 16.7% boys and 12.7% girls attended private homeopathic clinics (Table 3). Government health facilities were accessed for only 22.2% of boys and 9.1% girls. Herbal/traditional medicine, followed by pharmacy drugs was used more for girls than for boys (18.2% girls vs. 13.9% boys for herbal/traditional medicine, and 14.5% girls vs. 8.3% boys for pharmacy drugs). In the majority of cases, these treatment sources were not far from their homes (Table 4). For a majority of children, treatment was sought from a source within one kilometre (48.6% of boys, 47.3% of girls).

The proportions of households which incurred OOP expenditure were 88.9 and 87.3% for boys and girls, respectively, and 11.1 and 12.7% of households did not spend any money on treatment for their son or daughter, respectively (Table 5). Total and individual components of OOP expenses were higher for boys than for girls. The mean OOP expenditure on boys was INR 280 (US$ 7) (range INR 0–2200, US$ 0–55), higher than that for girls (INR 171, US$ 4.3) (range INR 0–1380, US$ 0–34.5). Total OOP expenditure consisted of four components: travel, consultation, medicines and stay. The cost of

Table 1 Sick children for whom treatment was sought

	Boys *n* = 94 (%)	Girls *n* = 81 (%)	Total *n* = 175 (%)
No. (%) who were ill	77 (81.9)	61 (75.3)	138 (78.8)
No. (%) who sought treatment	72 (93.5)	55 (90.2)	127 (92.0)
No. (%) of all sick children who were ill and for whom treatment was sought with OOP expenditure	64 (83.1)	48 (78.7)	112 (81.2)
No. of episodes of illness	111	98	209
No. (%) of episodes for which treatment was sought	87 (78.4)	61 (62.2)	148 (70.8)
No. (%) of episodes for which treatment was sought with OOP expenditure	75 (67.6)	53 (54.1)	128 (61.2)

Table 2 Distribution of most recent illnesses by gender

	Boys, *n* = 77			Girls, *n* = 61		
Illnesses	*n*	Sought treatment *n* (%)	Did not seek treatment *n* (%)	*n*	Sought treatment *n* (%)	Did not seek treatment *n* (%)
Wounds and skin diseases	8	7 (87.5)	1 (12.5)	5	5 (100)	0
Measles	1	1 (100)	0	3	3 (100)	0
Respiratory infections	15	13 (86.7)	2 (13.3)	9	9 (100)	0
Malaria	16	16 (100)	0	16	14 (87.5)	2 (12.5)
Diarrhoeal diseases	35	33 (94.3)	2 (5.7)	27	23 (85.2)	4 (14.8)
Other illnesses	2	2 (100)	0	6	1 (100)	0
Total illnesses	77	72 (93.5)	5 (6.5)	61	55 (90.2)	6 (9.8)

Table 3 Distribution of source of treatment for recent illness by gender

	Boys, *n* = 72 (%)	Girls, *n* = 55 (%)
Source of treatment:* Private clinics/hospitals	45 (62.5)	31 (56.4)
Government clinics/hospitals	16 (22.2)	5 (9.1)
Private homeopathic clinics	12 (16.7)	7 (12.7)
Herbal/traditional medicines	10 (13.9)	10 (18.2)
Clinics of non-government organisations	3 (4.2)	4 (7.3)
Pharmacies	6 (8.3)	8 (14.5)

*Treatment was often sought from more than one source.

medicines includes the cost of investigations. Of these components, the cost of medicines accounted for most of the total OOP expenditure for both boys (78.6%) and girls (72.5%). Consultation charges contributed 13 and 18% of total OOP expenditure for boys and girls, respectively. The contribution of travel costs (4.9% for boys, 5.7% for girls) and stay for treatment (3.5 and 3.8% for boys and girls, respectively) were comparatively less.

Univariate analysis to examine variability in total OOP expenditure by some socio-economic and demographic variables demonstrated that mean total OOP expenditure was higher for boys but not significantly different from that for girls (Table 6). Similarly, there were no significant differences in mean total OOP expenditure by other variables. However, the type of illness had a significant influence on mean OOP expenditure ($P = 0.001$). There was greater OOP expenditure on measles and diarrhoea. Multivariate regression analysis demonstrated that child gender ($P = 0.05$), mother's education ($P = 0.002$) and type of illness ($P = 0.002$) were significantly associated with total OOP expenditure (Table 7). The gradient of OOP spending increased with the level of maternal education. The coefficients of determination showed that the predictor variables explained 13.7% of variation in total OOP expenditure by these households.

Discussion

This study reports data on OOP expenditure in the most vulnerable sector of the population, tribal migrants living in urban areas, which has not been investigated hitherto. Vulnerability owing to poverty, migrant status and tribal affiliation leads to the risk of poor health and low access to health care. The prevalence of diarrhoeal diseases, malaria and respiratory infections were high. Worldwide, these are the most common acute childhood illnesses and are major contributors to child mortality.[17,18] A significantly lower proportion of illnesses were treated in girls ($P = 0.01$) than in boys and expenditure was incurred for girls significantly less frequently ($P = 0.05$) than for boys. There was a high dependence on private health care. In their original areas, tribal communities usually rely heavily on government-run primary health centres and institutions, along with their traditional health care systems.[19] The tribes enjoy a cultural identity, and familiarity with the area and its various facilities enables them to access well organised government health care services.[8] However, moving to a new urban environment makes them vulnerable and they can miss out on public health care services. The socio-economic inequities in an urban environment may affect access to and use of health services[20,21] and the selection of an appropriate health care provider.[22,23] Also, private facilities within two kilometres might be one of the reasons why they are used instead of the government facilities which are further away. While convenience (of distance and time), prompt

Table 4 Distance travelled for treatment by gender

	Boys, *n* = 72 (%)	Girls, *n* = 55 (%)
<1 kms	35 (48.6)	26 (47.3)
1–2 kms	23 (31.9)	22 (40.0)
3–5 kms	8 (11.1)	4 (7.3)
>5 kms	6 (8.3)	3 (5.4)
Median (range), kms	2 (0–200)	2 (0–99)

Note: kms, kilometres; analysis of variance for mean distance, $F = 0.262$, $P = 0.61$.

Table 5 Various components of out of pocket (OOP) expenditure for the treatment sought by the gender of the child

Expenditure	Boys, *n* = 72	Girls, *n* = 55	*P*-values
Expenditure on travel:			
Mean (SD), INR	13.7 (40.6)	9.8 (27.7)	0.27
Expenditure on consultation:			
Mean (SD), INR	36.3 (56.4)	30.8 (40.2)	0.27
Expenditure on medicines:			
Mean (SD), INR	220.2 (345.6)	123.8 (211.9)	**0.03**
Expenditure on stay:			
Mean (SD), INR	9.7 (63.2)	6.5 (23.8)	0.36
Total OOP expenditure:			
Mean (SD), INR	280.0 (432.2)	170.8 (259.7)	**0.05**

INR, Indian rupees (≈ US$ 0.025).
The values given in the column are P values. They are given in bold if they are significant ($P < 0.05$).

care and a courteous service are cited as reasons for using private health care providers, the cost of treatment, ease of access and the perceived severity of illness are the reasons for seeking treatment from traditional healers.[18, 24] Pharmacists were approached as they are close to home, consultation is free and only the cost of drugs is incurred.[24]

A considerable amount was spent (INR 233, approximately US$ 5.8) on each episode of illness. This is lower than national estimates, but little interpretative weight can be attached to this difference because of the restricted nature of the sample. These expenditures are quite considerable for tribal migrant households whose average monthly income was only INR 2594 (US$ 65). The Indian national sample survey (NSSO)'s data estimated that, overall, 4.7% of total household OOP expenditure is on health care.[25] The study population spent an even greater proportion of household income on health care. The NSSO's nationwide consumer expenditure survey found that, compared with the general population, scheduled tribes spent even more on health care.[26] Orissa's Public Health Beneficiary Survey in 2010 demonstrated that the gap between wealthy and poor households with regard to OOP expenditure on outpatient treatment at public facilities was only 16%, with the

Table 6 Results of univariate analysis of total OOP expenditure vs. other characteristics

Variable	No. of children	Mean (SD) total OOP expenditure, INR	ANOVA (*F*-value)	*P*-values
Child's gender				
Boy	72	280.0 (432.2)	2.75	0.10
Girl	55	170.8 (259.7)		
Child's age, yrs				
0–1	35	214.3 (380.9)	0.45	0.64
2–5	63	262.9 (349.5)		
>5	29	189.4 (407.4)		
Monthly family income				
INR 0–2000	50	231.6 (360.4)	0.01	0.99
INR 2001–4000	73	231.8 (380.9)		
>INR 4000	4	262.5 (393.0)		
Duration of stay in the city, yrs				
1–3	22	256.2 (256.3)	2.03	0.11
4–6	35	254.4 (436.6)		
7–9	26	78.5 (115.7)		
10–12	44	294.8 (438.4)		
Mother's education, yrs				
Illiterate	89	190.3 (294.3)	2.37	0.07
1–5	15	244.1 (365.7)		
6–10	18	338.1 (450.1)		
11	5	574.0 (921.0)		
Father's education, yrs				
Illiterate	53	241.8 (368.5)	0.17	0.91
1–5	18	217.8 (315.4)		
6–10	45	245.7 (435.0)		
11	11	160.4 (112.3)		
No. of children				
One	38	280.4 (390.6)	1.11	0.35
Two	34	241.2 (360.2)		
Three	29	262.7 (477.3)		
More than three	26	118.5 (143.8)		
Type of illness				
Wounds/skin diseases	11	80.0 (95.6)	4.22	**0.001**
Measles	4	319.5 (153.0)		
Respiratory infections	22	102.7 (95.0)		
Malaria	30	146.2 (214.9)		
Diarrhoeal diseases	56	312.9 (425.7)		
Other	4	807.5 (1009.7)		
Total	127	232.7 (370.3)	–	–

OOP, out-of-pocket; INR, Indian rupees (≈US$ 0.025); ANOVA, analysis of variance.

Table 7 Results of multiple regression analysis of OOP expenditure vs. other characteristics

Independent variables	Coefficient	Standard error of coefficient	*P*-values	Coefficient of determination
Constant	84.2	142.0	0.55	R^2 = 0.16
Child's gender	–112.6	61.9	**0.05**	Adjusted R^2 = 0.14
Child's age	5.0	46.1	0.91	
Family income	15.9	58.1	0.78	
Duration of living in the city	12.8	28.1	0.65	
Mother's education	123.7	39.0	**0.002**	
Father's education	–55.3	32.7	0.09	
Mother's number of children	–12.9	31.1	0.68	
Type of illness	76.6	23.9	**0.002**	

average OOP expenditure being INR 149 (US$ 3.7) and INR 178 (US$ 4.4), respectively, in the lowest and highest income groups.[27] Tribal households are among the lowest income groups. This survey reported that the greatest share of OOP expenditure was on medicines.[27] Based on other national estimates also, the greatest expenditure was on medicines in both public and private health care facilities (38–66% of total treatment costs).[28] Regardless of whether public or private health care is accessed, high spending on medicines constitutes the bulk of OOP expenditure. This is because drugs are not available in public health care institutions.[27] The second largest component was consultation fees: on average, 22 and 40% of OOP expenditure was, respectively, in public and private health care facilities.[28]

Data on treatment-seeking and OOP expenditure demonstrates gender bias in families. Households spent more money on treatment for boys than for girls, and this overt discrimination is found in all parts of India.[29, 30] This discrimination manifests in the reporting of illnesses,[31] making the decision to seek health care[32] and preferring private sector health services to public ones.[33] Discrimination in this migrant community can be attributed to the influence of neighbouring non-tribal households. Migration to a new culture means a new lifestyle and new norms with regard to gender, roles and statutes. Apart from gender, many other factors may influence the decision to seek treatment for a sick child. In this community, mother's education (P = 0.002) and the type of illness in the child (P = 0.002) significantly determined OOP expenditure. The literature suggests that a mother's level of education is associated with treatment-seeking behaviour for a sick child;[34] however, there was no evidence of its effect on health-care expenditure. The type of illness has an impact on treatment-seeking behaviour and health care expenditure.[34] The expenditure on minor illnesses was low because they were simply treated with medicines bought from pharmacists or by herbal/home remedies. Treatment for diarrhoea and measles incurred greater expenditure and diarrhoea was often treated by private practitioners. Children are likely to be taken for treatment to various sources, depending on the perceived seriousness of the illness by the caretakers.[24, 31]

Recent Indian studies report that health care access increased significantly after introduction of the Government of India's National Health Mission and Government-sponsored insurance initiatives.[35–37] OOP expenditure also decreased after these schemes were introduced.[38] However, no one in this study had subscribed to these schemes, and research indicates that their impact is less apparent in vulnerable communities such as tribal ones.[38] Also, in the absence of effective health care targeting, benefits from public services will disproportionately flow to the wealthier in India.[39, 40]

Even the smallest expenditure on health care can be financially disastrous for the poor; almost all their available resources are for basic needs such as food and shelter, and they are less able to afford even very low health care expenditure. Hence, free public health care must be available to these urban poor, and local government should include them in government-sponsored insurance schemes to protect them from catastrophes caused by the cost of health care. Physical inaccessibility to health facilities is a major obstacle.[9] Cities provide many health facilities at a range of costs, and in Indian cities there is a burgeoning, largely unregulated private sector and a beleaguered public sector. Quality of care and choice of an appropriate provider is therefore problematic.[41] Hence, this study advocates the development of a policy to improve access to health care for the considerable migrant tribal population in almost all Indian cities.

The following are some strengths and limitations of the study. It was not possible to select the sample from all migrant tribal communities in the city on the basis of probability; instead, it was limited to four slums predominantly inhabited by tribal communities. The external validity is therefore a limit to generalising these findings, but all three contexts for generalisation, i.e. people, situation and time are similar to other tribal migrant communities. The information collected was based on retrospective reporting of the participants' experience, which includes reporting bias on the narration of illness which could result in underestimation of illness prevalence. As the study's focus was on health care seeking and expenditure, this underestimation does not per se threaten the validity of the findings. Also, the data on OOP expenditure report only OOP expenditure and not indirect losses related to illnesses, which is of concern with regard to assessing the overall burden of illness. Illness can lead to other losses such as a mother's or caregiver's wages when

a child is ill, and assets might have to be sold or mortgaged. These indirect costs were not examined in the OOP expense data. The contribution of these losses was minor in the study population and the main conclusions are not affected.

To conclude, the study addresses the treatment-seeking behaviour, poor access to government health care and high OOP expenditure in relation to low income in migrant tribal communities in a city who attempt to adapt to an urban culture by holding traditional perceptions alongside modern facilities. Hence, a comprehensive migrant-sensitive health care system embracing the above cultural issues is required. As poverty and migration exacerbate gender discrimination, this discrimination needs to be addressed in the state's efforts to alleviate poverty and improve the health and education of both genders.

Disclaimer statements

Conflicts of interest

None

Funding

None

Ethics approval

The study protocol was approved by the Doctoral Committee of Sambalpur University which reviewed the ethics and approved the research programme.

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