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Abstract

Background: Informal payments are unauthorised ‘unregistered’ out-of-pocket payments, outside the official payment system, for purchase or service meant to be covered/provided by the healthcare system. This study attempts to measure and report the extent and magnitude of informal payments based on the entitlements in Janani-Shishu Suraksha Karyakram (JSSK) in the Indian context.

Methods: A cross-sectional study using convenience sampling and a semi-structured interview schedule was conducted among 281 participants in 2016 in 26 JSSK-notifying health facilities from all five divisions of Chhattisgarh. Pregnant women and women who delivered in the previous year, and provided informed consent, were included. After reviewing various definitions, informal payment was operationally defined in the context of JSSK for India as ‘payments made in cash or kind, unregistered or non-reimbursed, made by/on behalf of the beneficiary or someone related thereof, for free and cashless entitlements in a JSSK-listed health facility, to an individual or institutional healthcare provider/staff who provides/arranges for provision of the service’.

Results: Of 281 participants, 91.8 per cent reported informal payments across all JSSK entitlements categories. A relative majority of these payments was made at the district hospital (37%), ranging from ₹2 to ₹6,500 (US\$0.03–101). Investigations incurred the greatest median amount of informal payments, at, ₹455 (US\$7). Informal payments ranged between three and seven times higher than the JSSK price cap in Chhattisgarh. No significant association was found between participant characteristics and informal payments.

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Conclusion: Further research is required to understand the magnitude and motivation of informal payments made in programmes like JSSK.

Keywords

Informal payment, out-of-pocket expenditure, Janani-Shishu Suraksha Karyakram, maternal health, neonatal health, India

Introduction

Many countries have initiated demand-side financing schemes in the form of conditional cash transfer for incentivising institutional deliveries to encourage institutional deliveries to reduce maternal mortalities. In India, Janani Suraksha Yojana (JSY) was launched in 2005 under National Rural Health Mission, as a conditional cash transfer scheme (Government of India, 2006). JSY offers ₹1,400 (US\$21.74) in rural areas and ₹1,000 (US\$15.53) in urban areas, of low performing states, to women delivering in public or accredited private facilities (Government of India, 2006).

However, there are reports of corruption in JSY, (e.g., fake beneficiary data, fictitious transfers) compounded by lack of access to transport, poor quality services, inadequate infrastructure and exclusionary criteria, thus limiting the programme's impact (FirstPost Staff, 2015; Mrigank, 2015; Sharma & Bothra, 2016; Ved, Sundararaman, Gupta, & Rana, 2012). Janani Shishu Suraksha Karyakram (JSSK) was launched in 2011, especially to eliminate out-of-pocket expenditure (OOPE) for its beneficiaries (Government of India, 2015; Modugu, Kumar, Kumar, & Millett, 2012). It aims to provide completely free and cashless services to pregnant women including normal deliveries and caesarean operations and sick newborn in Government health institutions in rural and urban areas (Government of India, 2011). Despite the increase in institutional deliveries from 40.7 per cent (2005–2006) to 72.9 per cent (2009–2010), there has not been a decrease in high unaccounted OOPE on maternal and neonatal care in institutional deliveries (Dhar et al., 2009; Gopalan & Varatharajan, 2012; Modugu et al., 2012; United Nations Children's Fund [UNICEF], 2009). This has led to non-utilisation of maternal health services due to cost incurred by families (Government of India, 2007; Sharma & Bothra, 2016).

A significant amount of OOPE in public health facilities across various countries are informal payments (Kaitelidou et al., 2013). Understanding informal payments, which are not recorded, helps to estimate the true nature of 'private' expenses incurred (Balabanova & McKee, 2002). Informal payments, can also adversely affect equity and healthcare reform (Balabanova & McKee, 2002; Kaitelidou et al., 2013). This may have implications for the need and magnitude of public sector funding, in addition to deepening our understanding about the 'economic barriers to care'. Informal payment has been defined in various ways depending on factors such as context, motivation, timing, payment types, etc. (Balabanova & McKee, 2002; Cherecheş, Ungureanu, Sandu, & Rus, 2013; Kaitelidou et al., 2013; Stepurko, Pavlova, Gryga, Murauskiene, & Groot, 2015). Emphasis has been placed on the 'informal' or 'unregistered' nature of the payments either 'monetary' or 'in kind' (Balabanova & McKee, 2002). A systematic review of different informal payment definitions has emphasised the lack of a uniform definition for informal payments, while discussing the challenges in framing one in varying contexts (Cherecheş et al., 2013).

Informal payments, especially in maternal and child health services, have been reported to cause significant financial burden on families in developed and developing countries, including India (Balabanova & McKee, 2002; Sharma et al., 2005). This can pose as a major barrier to utilise maternal healthcare services (Skordis-Worrall et al., 2011; Srivastava, Avan, Rajbangshi, & Bhattacharyya,

2015). Despite the frequent reporting of informal payments from other countries, and its impact on efficiency, equity and resource allocation', published literature on the extent and components of informal payments in maternal and child healthcare from the Indian context is scarce (Balabanova & McKee, 2002; Kaitelidou et al., 2013). This study attempts to develop an operational definition of informal payments for JSSK in the Indian context. Additionally, this study also aims to identify, measure and report the prevalence and magnitude of informal payments based on the entitlements in JSSK in the Indian context.

Methods

A cross-sectional study was conducted during the period of February 2016 to April 2017 in the five divisions (Surguja, Bilaspur, Durg, Raipur, Bastar) of Chhattisgarh (Figure S1). A total of 10 districts (two per division) were selected randomly using lottery method. From these, 26 JSSK-notifying health facilities were selected using convenient sampling. These comprised sub centres (SCs), primary health centres (PHCs), community health centres (CHCs), civil hospitals (CHs), district hospitals (DHs) and medical colleges (MCs) (Figure S1).

Pregnant women and women who delivered up to 1 year before the study was conducted, and who were utilising/had utilised JSSK services were eligible to participate in the study. Women who delivered at home and did not provide a written informed consent were excluded from the study. Pregnant women were prospectively enrolled from the health facilities, while women who delivered in the previous year were identified retrospectively through maternal and child health (MCH) registers from the selected facilities. Convenient sampling was used to select the participants. A total of 281 participants including 108 pregnant women, 119 women who had just given birth and 54 mothers with newborns were included in the study. The number and proportion of participants from each of the JSSK notifying health facilities in the 10 districts have been provided in the appendix.

Data were collected by suitably qualified and trained public health researchers using a semi-structured interview schedule in Hindi on general information (health facility name, district and division), socio-demographic and economic information (age, education, occupation and socio-economic status of the woman), beneficiary information (beneficiary type, place and mode of delivery, birth attendance), JSSK service utilisation and informal payments made for JSSK services.

Operational Definition

Informal payment was operationally defined for our study after reviewing various definitions for informal payments and framing a definition in the context of JSSK for India (Balabanova & McKee, 2002; Belli, Shahriari, & Curtio Medical Group, 2002; Cherecheş et al., 2013; Gaal, Belli, McKee, & Szocska, 2006; Gaal, Evetovits, & McKee, 2006; Gaál et al., 2010; Government of India, 2007, 2015; Indrani, Krishna, & Alok, 2008; Kaitelidou et al., 2013; Killingsworth et al., 1999; Lewis, 1999; Shahriari, Belli, & Lewis, 2001; Sharma et al., 2005; Simkhada, Van Teijlingen, Sharma, Simkhada, & Townend, 2012; Stepurko et al., 2015). A systematic review of existing definitions of informal payment in healthcare highlighted three guiding categories, but not without challenges, to assist in defining informal payments: '(1) as illegal payments, (2) as unofficial or informal, (3) dictated by the terms of entitlement' (Cherecheş et al., 2013). While the first category is challenging to ascertain, we utilised the concept of 'informality' and 'entitlement' to guide our definition related to JSSK in the Indian context. Broadly, we defined infor-

mal payments as ‘payments made in cash or kind, unregistered or non-reimbursed, made by/on behalf of the beneficiary or someone related thereof, for free and cashless entitlements and in a health facility listed in JSSK, to an individual or institutional health care provider/staff who provides/arranges for provision of the service’ (Table 1). Informal payment was computed from the data and treated as a dependent variable, for maternal, neonatal and total services under JSSK.

Table 1. Components and Operational Definition of Informal Payment

No.	Component	Operational Definition
1.	Type of facility admitted to	Public (24’7 PHC till district hospital and medical colleges) (Thampi, 2002)
2.	Type of personnel paid to	Any ‘individual or institutional (public or private) health care provider or to any person’ who provides or ‘arranges for provision of’ any type of healthcare or healthcare-related service received or expected to be received by the beneficiary availing JSSK services in a public healthcare institution (including healthcare providers, health workers, Group D staff, lab technician, pharmacist, etc.) (Aarva, Ilchenko, Gorobets, & Rogacheva, 2009; Belli, Gotsadze, & Shahriari, 2004; Belli et al., 2002; World Bank, 2001)
3.	Type of payment	Non-reimbursed; cash or kind (World Bank, 2001); taxable or non-taxable (Burak & Vian, 2007)
4.	Person paying	The beneficiary or anyone related or on behalf of the beneficiary (Aarva et al., 2009; Belli et al., 2004; Liaropoulos, Siskou, Kaitelidou, Theodorou, & Katostaras, 2008; Simkhada et al., 2012; World Bank, 2001)
5.	Scope of payment	Payment made for any service which is listed as free entitlement for beneficiary of JSSK (Thampi, 2002)
6.	Motivation	Payments expressed as being made out of genuine gratitude or free will/voluntary despite being provided with the ‘full range of information’ (Burak & Vian, 2007) related to JSSK will not be considered as informal payment
7.	Definition of ‘Informality’	‘That are outside the official payment system’, (Lewis, 1999) for purchase meant to be covered or service meant to be provided by the health care system, ‘unauthorized fee payments that co-exist with “free care”’ (Vandenbroucke et al., 2007), unregistered economic activity (Balabanova & McKee, 2002; Gaal et al., 2006)

Source: Compiled by the authors from various reference papers.

Data entry was performed in MS Excel. Statistical analysis was performed on MS Excel and Statistical Package for Social Sciences (SPSS v 16.0, SPSS Inc., Chicago, IL, USA). Any missing data was excluded from the analysis. Continuous variables with normal distributions were reported in means and standard deviations, else median and range were used. Frequencies and percentages were used to report categorical variables. Relation between amount of informal payments (continuous variable) and participant characteristics (categorical variables) was determined using non-parametric tests (Mann–Whitney U-test and Kruskal–Wallis tests). *p*-values less than 0.05 were considered significant. All costs were captured in

Indian National Rupees (₹) and then converted to US dollars (US\$), based on the conversion rate of ₹1 = US\$0.0155312 as of 12 July 2017.

This study was conducted according to principles laid out in the Declaration of Helsinki. Ethics approval was obtained from Institutional Review Committee. Confidentiality was assured by providing each participant with a unique identification number and coding of potential identifiers (e.g., education, occupation, beneficiary type, facility type and area) during data entry and analysis. This study is reported in accordance with the ‘Strengthening the Reporting of Observational Studies in Epidemiology (STROBE)’ statement (Vandenbroucke et al., 2007).

Results

A total of 281 participants took part in the survey. All those who were approached at the facilities agreed to participate. All results have thus been provided for the majority group, that is, participants who reported informal payment. Majority of the women (157; 60.9%) were aged between 20 and 24 with the least proportion (4; 1.6%) between 35 and 39. About one-third of the participants had completed high school (75; 29.1%). Majority of the participants were housewives (193; 74.8%) and below poverty line (177; 68.6%). Among different beneficiaries, 108 (41.9%) were pregnant women, 100 (38.8%) had just given birth and 50 (19.4%) were utilising postnatal care for their newborn (Table 2).

Table 2. Characteristics of Participants Reporting Informal Payments

Participant Characteristics	N (%)
<i>Age group (in years)</i>	
15–19	14 (5.4)
20–24	157 (60.9)
25–29	70 (27.1)
30–34	13 (5)
35–39	4 (1.6)
<i>Educational level</i>	
Illiterate	29 (11.2)
Primary school	26 (10.1)
Middle school	69 (26.7)
High school	75 (29.1)
Higher secondary	34 (13.2)
Graduation and above	18 (7)
Graduation in progress	7 (2.7)
<i>Occupation*</i>	
Housewife	193 (74.8)
Daily wage earner	25 (9.7)
Farmer	36 (13.9)
Salaried	4 (1.6)

(Table 2 Continued)

(Table 2 Continued)

Participant Characteristics	N (%)
<i>Economic status</i>	
Below poverty line	177 (68.6)
Above poverty line	81 (31.4)
<i>Beneficiary type</i>	
ANC/Pregnant woman	108 (41.9)
Delivered	100 (38.8)
Newborn	50 (19.4)
<i>Delivery place (n = 154)</i>	
District hospital (DH)	54 (35.1)
Community health centre (CHC)	45 (29.2)
Primary health centre (PHC)	37 (24)
Medical college (MC)	7 (4.5)
Private	5 (3.2)
Civil hospital (CH)	2 (1.3)
Other	4 (2.6)
<i>Delivery type</i>	
Normal	123 (79.9)
Caesarean	31 (20.1)
<i>Delivery conducted by</i>	
Nurse	126 (82.9)
Doctor	23 (15.1)
Auxillary nurse midwife (ANM)	3 (2)

Source: Authors' calculations.

Note: * Represents daily wage earners include labourer, cook, weaver, tailor; salaried includes private job, teacher, mitanin and anganwadi worker.

Informal Payments

Of the 258 (91.8%) participants who reported informal payments, 208 (80.7%) were related to pregnancy and delivery-related entitlements and 50 (19.4%) were for neonatal entitlements (Table 2). Response rates for the variables used for computation of informal payments have been provided in the appendix.

Facilities

Participants had made informal payments at the district hospital (35.1%), community health centres (29.2%), primary health centres (24%) and medical colleges (4.5%). 1.3 per cent of informal payments were made at the civil hospital.

Services/Scope of Informal Payments (Figure S2, given in percentages)

Informal payments were reported for all of the JSSK entitlements—user fees ($n = 78$), medications and consumables ($n = 110$), delivery ($n = 39$), investigations, such as blood and urine ($n = 22$), ultrasonography ($n = 85$), blood transfusion ($n = 4$), diet ($n = 12$) and transport (residence to facility: $n = 197$; referral: $n = 4$; facility to residence: $n = 104$). For transport, about one-third of the participants who did not use JSSK transport services were unaware of these entitlements in JSSK. The next common reason reported was related to ambulance services (Figure S2).

A total of 85 participants reported informal payments for ultrasonography (USG), of which 48 participants undertook USG at a private health facility. Thirty-five were advised by healthcare staff at public health facilities to go to a private healthcare facility/elsewhere for USG. Some other reasons for not undertaking USG at a public facility included participant's unwillingness ($n = 13$), no USG facility/USG unit closed/under repair/informed that it cannot be performed at public health facility ($n = 7$), and healthcare provider's (e.g., doctor) absence to perform USG at public health facility ($n = 3$).

Type of Personnel to Whom Informal Payments Were Made

Informal payments were reported as being made by participants to health provider and staff who were present during the delivery. Thirteen participants reported that informal payments were made to nurse/ANM, cleaner ($n = 5$), mitanin ($n = 4$) and dai ($n = 3$). While nine participants reported informal payments to more than one health staff, two participants did not know the staff type to whom payment was made.

Amount (in ₹ and US\$) (Table 3)

The amounts spent on informal payment ranged from ₹2 (US\$0.03) to ₹6,500 (US\$100.94) for various maternal and neonatal services. The services and amounts for which informal payments were reported were as follows: user fees ₹2–₹45 (US\$0.03–0.69), medications and consumables ₹20–₹6,500 (US\$0.31–100.94); delivery: normal ₹100–₹1,100 (US\$1.55–17.08), caesarean ₹200–₹1,800 (US\$3.11–27.94); investigations ₹15–₹1,040 (US\$0.23–16.15) (blood and urine ₹30–₹900 [US\$0.47–13.97], ultrasonography ₹15–₹850 [US\$0.23–13.19]); blood transfusion ₹400–₹1,000 (US\$6.21–15.53) and transport (amount not reported). For medications and consumables, majority reported having made informal payment for iron and calcium tablets (28), syrups (28) and generic medicine provided in pouches (26). Other medications included antibiotics such as ampicillin and gentamycin (2), heptalase (2), paracetamol (1), magnesium sulphate (1), ranitidine (1) and dicyclomine (1). Consumables for which informal payments were reported included injections (5), binder (3), bandage (1), bottle (1), belts and napkin (2), protein mixture (2) and urine bag (1). Twenty-seven participants reported informal payments for medications and consumables but did not provide particulars for the same.

Table 3. Amount of Informal Payment Made (in ₹) for Various Services

Service Type	User Fee	Medication/ Consumable	Normal Delivery	Caesarean Section Delivery	Investigations: Blood and Urine	Investigations: USG
<i>Beneficiary</i>						
Woman	5 (2–20)	400 (30–6,500)	300 (100–1,100)	275 (200–1,800)	210 (30–900)	650 (15–850)
Newborn	10 (2–45)	150 (20–1,500)	NA	NA	NA	NA

(Table 3 Continued)

(Table 3 Continued)

Service Type	User Fee	Medication/ Consumable	Normal Delivery	Caesarean Section Delivery	Investigations: Blood and Urine	Investigations: USG
<i>Delivery</i>						
Normal	5 (5–15)	275 (100–1,100)	300 (100–1,100)	NA	900 [‡]	525 (180–350)
Caesarean	8 (5–10)	325 (50–600)	NA	275 (200–1,800)	50 [‡]	700
<i>Place of delivery†</i>						
MC	0	0	200	0	0	550 (212)*
DH	8 (3)*	330 (40–1,800)	300 (100–1,100)	325 (50–600)	475 (50–900)	700 (71)*
CHC	8	313 (131)*	330 (196)*	0	0	475 (175)*
PHC	5 (5–15)	130 (125–900)	500 (150–900)	0	0	800

Source: Authors' calculations.

Notes: Amount provided in median (range) unless otherwise specified.

* Represents mean (SD), † represents amount not reported for other places of delivery, ‡ represents insufficient number of responses and NA = not applicable.

Informal Payments Above Janani-Shishu Suraksha Karyakram Price Cap

Though JSSK is meant 'free and cashless' entitlements, the State Government of Chhattisgarh implements JSSK with a monetary price cap on some entitlements (Government of India, 2011, 2015). The higher limit of the informal payment ranged three to seven times higher than the price gap on various services (Table 4).

Table 4. Price Cap and Observed Costs on JSSK Services in the State of Chhattisgarh

JSSK Beneficiary and Service	Price Cap Declared by State		Present Study	
	Amount (₹) Per Case		Informal Payments Median Amount (₹)	Informal Payments Amount Range (₹)
<i>Drugs and consumables</i>				
Normal delivery	350		275	100–1,100
Caesarean delivery	1,600		375	50–600
Diagnostics	200		455	15–1,040
Blood transfusion	300		Not computed†	400–1,000

(Table 4 Continued)

(Table 4 Continued)

JSSK Beneficiary and Service	Price Cap Declared by State	Present Study	
	Amount (₹) Per Case	Informal Payments Median Amount (₹)	Informal Payments Amount Range (₹)
<i>Diet</i>			
3 days (normal delivery)	300*	Data not available [‡]	Data not available [‡]
7 days (caesarean delivery)	700*	Data not available [‡]	Data not available [‡]
<i>Sick infants up to 1 year</i>			
Drugs and consumables (other than reflected in Procurement)	200	150	20–1,500
Diagnostics	100	Data not available [‡]	Data not available [‡]
Blood transfusion	300	Data not available [‡]	Data not available [‡]
Diet for mother of sick child	500	Data not available [‡]	Data not available [‡]

Source: Authors' calculations.

Notes: * Represents provisions also state, that is, ₹160 per day to be allocated for diet under JSSK, † represents only two responses, ‡ represents costs not reported.

Participant Characteristics and Informal Payment

Participant characteristics including age, educational level, occupation, economic status, type of beneficiary, type and place of delivery and type of health provider conducting delivery were not significantly associated with reports of informal payment (Table 5). Average informal payments were reported to be highest for participants aged between 15 and 19 (₹376, SD = ₹390 [US\$5.84; SD = US\$6.06]), studying in graduation (₹252, SD = ₹324 [US\$3.91, SD = US\$5.03]), who were salaried (₹430, SD = ₹332 [US\$6.68, SD = US\$5.16]), below poverty line (₹180, SD = ₹336 [US\$ = 2.80, SD = US\$ 5.22]), who had just given birth (₹197, SD = ₹327 [US\$ = 3.06, SD = US\$ 5.08]), had caesarean delivery (₹196, SD= ₹376 [US\$=3.04, SD= US\$5.84]) and had a nurse conduct their delivery (₹194, SD=₹363 [US\$= 3.01, SD= US\$ 5.64]).

Table 5. Relation Between Participant Characteristics and Informal Payments (in ₹)

Participant Characteristics	Mean (SD)	p-Value
<i>Age group (in years)</i>		
15–19	376 (390)	0.089
20–24	175 (334)	
25–29	150 (305)	
30–34	88 (212)	
35–39	175 (350)	

(Table 5 Continued)

(Table 3 Continued)

Participant Characteristics	Mean (SD)	p-Value
<i>Educational level</i>		
Illiterate	204 (371)	0.584
Primary school	167 (297)	
Middle school	118 (244)	
High school	214 (384)	
Higher secondary	181 (350)	
Graduation and above	146 (274)	
Graduation in progress	252 (324)	
<i>Occupation</i>		
Housewife	166 (329)	0.454
Daily wage earner	167 (279)	
Farmer	196 (344)	
Salaried	430 (332)	
<i>Economic status</i>		
Below poverty line	180 (336)	0.804
Above poverty line	163 (307)	
<i>Beneficiary type</i>		
ANC/Pregnant woman	157 (280)	0.630
Delivered	197 (327)	
Newborn	167 (414)	
<i>Delivery place</i>		
District Hospital (DH)	176 (323)	0.204
Community Health Centre (CHC)	101 (228)	
Primary Health Centre (PHC)	255 (454)	
Medical college (MC)	387 (424)	
Private	368 (647)	
Civil Hospital (CH)	1 (1)	
Other	13 (22)	
<i>Delivery type</i>		
Normal	179 (349)	0.448
Caesarean	196 (376)	
<i>Delivery conducted by</i>		
Nurse	194 (363)	0.978
Doctor	141 (333)	
ANM	134 (230)	

Source: Authors' calculations.

Discussion

Informal payments for health have consequences to equity considerations in the health system, especially in developing countries like India. In public healthcare systems aimed at reducing out-of-pocket expenditures for the poor, the presence of informal payments defeats the entire purpose of any public health entitlements as part of the Universal Health Coverage (UHC) strategy of a government (Chereches et al., 2013; Indrani et al., 2008).

Defining the Scale and Scope of Informal Payments

More than 90 per cent of our participants reported some form of informal payment. A previous Indian study on informal payments in public healthcare reported a prevalence of 20 per cent among its subjects (Indrani et al., 2008). Another study from Nepal found informal payments to be made by 85 per cent of their participants (Simkhada et al., 2012). Differences in this scale of informal payments can arise due to varying definitions used in these studies. A previous secondary analysis conducted in 2008 limited informal payments ‘to monetary transactions between patients and providers which have no official sanction or for goods or services which should otherwise have been covered by the public health system’ (Indrani et al., 2008). JSSK essentially provides certain ‘free’ and ‘cashless’ entitlements to its beneficiaries based on the fact that expenses borne by beneficiaries for utilising MCH services (e.g., institutional delivery) can be a barrier to its use (Government of India, 2011). Additionally, JSSK empowers healthcare providers (e.g., medical officers) to use discretionary powers to procure/provide ‘unavailable’ JSSK services to the beneficiaries. Therefore, in a broader view, any expenses borne by the individual/their families, and not registered by the formal system, for use or purchase of entitlements specified to be free, cashless and provided by JSSK, should be considered within the realms of informal payments. This also emphasises to look beyond the limits of ‘monetary’ payments to capture the true extent of expenses borne by the beneficiaries and/or their families, despite being enrolled in free schemes. Whether this includes the quality of services provided can be debatable because of the lack of explicitly defined standards for ‘quality’, thus introducing inherent subjectivity (e.g., quality of diet provided during the stipulated period of hospital stay). This would, however, require an objective measurement against set criteria, which was beyond the scope of this study.

Among participants reporting informal payments in our study, none of the services were exempt from informal payments. Previously, multiple studies have reported on the OOPE at public health facilities to receive services during pregnancy, institutional delivery and infant care (Bonu, Bhushan, Rani, & Anderson, 2009; Issac, Chatterjee, Srivastava, & Bhattacharyya, 2016; Mondal, Mukhopadhyay, Mukhopadhyay, & Sinhababu, 2015; Mukherjee, Singh, & Chandra, 2013; Prinja et al., 2015; Shukla, Kumar, Agarwal, Singh, & Gupta, 2015; Tyagi, Pattabi, & Kaur, 2016). Diagnostics/investigations, followed by medications and consumables, accounted for the highest informal payments in our study. Studies from other Indian states have similarly found that diagnostic services cost the highest OOPE followed by medicine costs and constituting a major part of OOPE in JSSK (Issac et al., 2016; Mondal et al., 2015; Sharma & Bothra, 2016).

About one-third of the participants who did not use JSSK transport services were unaware of the transport entitlements in JSSK. The next common reason reported was related to ambulance services (e.g., not available, delay, under repair, etc.). Studies from West Bengal and Delhi have found similar gaps in the awareness of JSSK entitlements and OOPE being incurred by individuals for entitlements including transport (Mondal et al., 2015; Sharma & Bothra, 2016). Interestingly, explicit guidelines

regarding the provision of timely and free transport have been provided by JSSK including public–private partnership and elimination of any price cap on transport. Additionally, reports claim that expenditures incurred are largely due to the unawareness regarding JSSK entitlements (Sharma & Bothra, 2016). It is, however, unclear why about one-fifth of the participants who perceived as not requiring the entitlement or chose not to use it. Our findings suggest a need for policy action to increase awareness among JSSK beneficiaries about the comprehensive and free health services. A qualitative inquiry is warranted to explore this further.

While JSSK ensures free and cashless services to its beneficiaries to eliminate OOPE for various services, it is a thought-provoking to note that the Government of Chhattisgarh lays a price cap on the services related to JSSK (Government of India, 2011, 2015). The higher limit of the amount of informal payment reported by the beneficiary ranged three to seven times higher than the stipulated price gap on various services. The basis and need of this price gap provided by the State Government is unclear since JSSK is stated to be a free and cashless service (Government of India, 2011). Nevertheless, this price cap might partly explain the higher prevalence of informal payments in our study compared to that of other studies.

Our study did not find a significant relation between participant's characteristics and informal payments. A study conducted in Greece reported higher informal payments to be significantly associated with deliveries conducted by participant's personal obstetrician among other factors (Kaitelidou et al., 2013). The small sample of our study may explain variations in intra-study findings.

Strengths

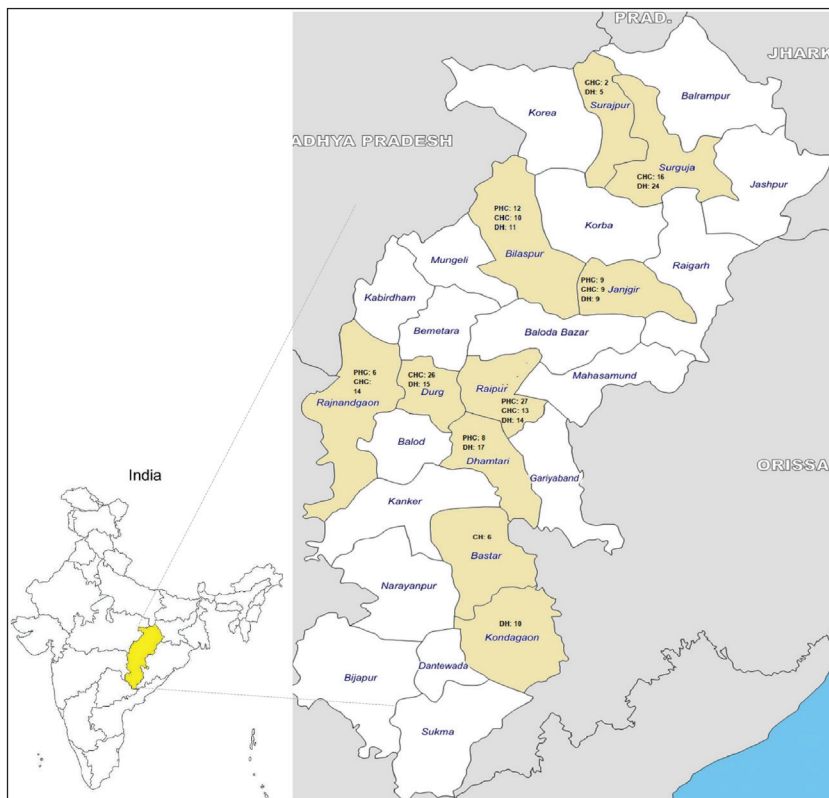
This is the first study, to the best of our knowledge, to comprehensively define and investigate informal payments and its use in utilisation of maternal health services in India. This was an extensive study with a moderate sample across 10 districts of all five divisions in the state of Chhattisgarh selected from multiple JSSK notifying facilities. Data were collected from the residence of the participants and from hospitals.

Limitations

This study aims to throw light on the existence of informal payments in schemes like JSSK, which are meant to be free and cashless for its beneficiaries. It is also an attempt to define the boundaries of informal payments in the context of JSSK. Though the magnitude of and reason for informal payments were reported, caution must be exercised in generalising these findings to other Indian states, due to small samples for the same. Additionally, we were unable to capture the cost of all services due to lack of provision of complete information by the participants. We also used a convenience sampling strategy to select the participants, thus leading to underrepresentation from some districts and type of beneficiaries. Further research, incorporating random sampling, to investigate the wider application of the definition, magnitude and motivation for informal payments, and more importantly, the determinants of informal payments, is required. A direction could be to use mixed-methods approach to elicit responses, preferably from participants' responses, to provide an in-depth understanding into the same.

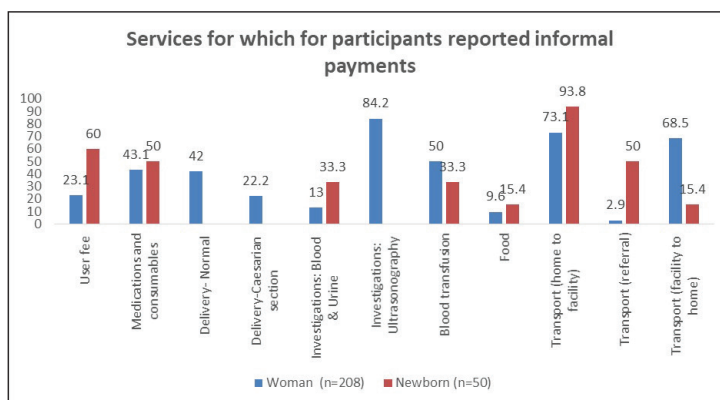
Supporting Information

Figure S1. Map of Chhattisgarh showing locations (light brown), facilities and number of participants in the study



Source: The authors.

Figure S2. Services for which participants (%) reported informal payments



Source: Authors' calculations.

Conclusion

While JSSK has largely been successful in increasing institutional deliveries, it has not been successful in eliminating informal payments. There is a need to look beyond monetary expenses to understand the true scale and scope of OOPE. Further research is required to understand the magnitude and motivation of informal payments made in programmes like JSSK. Finally, research is needed to understand how the issue of informal payments can be effectively addressed.

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Declaration of Conflicting Interests

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