

Medicine and Society

Maternal healthcare and perinatal mortality among brick kiln migrant workers: A case study

ARCHANA S., VIJAY SILAN, SHASHI KANT

INTRODUCTION

The National Sample Survey Organization defines migrants as those for whom the last usual place of residence, where the person had stayed continuously for a period of 6 months or more, is different from the present place of enumeration. Short-duration migration is defined as persons staying away from their usual place of residence for 60 days or more for better employment or in search of employment.¹ According to the 2001 Census of India, the proportion of migrants was 30%.² More than 90% of the workforce in India is in the unorganized sector, also consisting of migrants.³ These migrant labourers make enormous contribution to the Indian economy through sectors such as construction, textiles, brick-making, stone quarries, mines, etc.⁴ The brick kiln industry in India is large and second only to that of China in terms of global production with over 100 000 brick kilns, employing about 10 million workers.⁵ Brick kilns serve as a source of livelihood for thousands of unskilled workers. A large number of these workers are also interstate migrants, with people from Uttar Pradesh being the largest from a state.⁶ Brick kilns are situated mainly in rural and in semi-urban areas, the work is predominantly seasonal and informal, attracting migrant labourers who are often landless farmers. The labourers are paid on a piece rate with average daily wages varying from ₹200 to ₹400 (US\$ 2–4).⁷ The monthly income of over half (52%) the unskilled migrants was < ₹3000 according to a study conducted in Bengaluru, Karnataka.⁸

The Unique Identification Authority of India, an agency of the Government of India responsible for implementing the AADHAR scheme, requires migrants to be present in their home town to get enrolled.⁹ Enrolment with this authority scheme has been the basis of determining eligibility for various government schemes. Therefore, it is possible that migrant workers are excluded from government schemes to varying degrees such as voting rights, subsidized food and fuel, and even healthcare.

A brick kiln owner typically provides water facilities to the workers in the form of a bore well. Usually no sanitation facility, even of the most rudimentary kind, is provided, and labourers defaecate in the open.¹⁰ Facilities such as a crèche, medical first-aid and transportation are not available to the workers. It is known that migrant workers in the brick kiln industry suffer many health hazards.^{11,12} They have to travel long distances to reach government hospitals; they are often unable to visit these facilities during illness. A study by Garg *et al.* found that among slum women, mostly migrants, who had not received antenatal care, 79% of their husbands were unskilled labourers. The perceived barriers for utilization of healthcare services were lack of knowledge, no

one to accompany them, financial constraints and working conditions.¹³ Most of these migrant labourers visit either private practitioners or local unqualified doctors (quacks).¹⁰

To improve the quality of life of rural citizens, and reduce the infant mortality rate and maternal mortality ratio, the Government of India launched the National Rural Health Mission (NRHM).¹⁴ In the villages grassroots workers such as accredited social health activist (ASHA) and auxiliary nurse midwife (ANM) carry out home visits to create awareness about maternal and child health facilities. Basically, they prepare mothers for safe delivery called 'birth preparedness' according to the work plan.^{15,16} However, during planning, due to lack of clarity about the arrival and departure of labourers, location of brick kilns which keep changing, and number of labourers, migrants are invisible in government policies such as the NRHM.

LOCAL SETTING

The brick kiln that we allude to was one of 21 others situated in an area served by the primary health centre (PHC), Dayalpur, district Faridabad, Haryana. Brick kilns employ 100–250 labourers during a season, which is typically 6–8 months long. The workers at these sites were mostly from the states of Uttar Pradesh, Rajasthan, Jharkhand and Chhattisgarh. Most of the labourers (85%) worked for a minimum of 10 hours, but these could extend to 14–15 hours per day.¹⁰ For healthcare, sick men and even pregnant women, in brick kilns preferred not to come to a health facility as this would mean loss of wages. There was no effort from the local government health facilities to reach this vulnerable population. Discussions with labourers of brick kilns revealed that few unqualified doctors provided paid services at brick kilns. We speculate that multiple factors, e.g. awareness, time, cost, distance and others limit access to a public health facility and influence the decision of migrant labourers to avail private healthcare.

THE CASE

The index case was a 26-year-old woman, married for the past 13 years to a daily wage labourer who worked in a brick kiln situated 2 km away from PHC Dayalpur. She had a bad obstetric history, with an obstetric score of G6P5L1 but only one live child (Table I).

In none of her previous pregnancies did she receive the recommended antenatal care (ANC). In the second pregnancy there was a history of the baby developing jaundice which had started on the first day of life and deepened. In the fourth pregnancy, even though the delivery was by a lower segment caesarean section (LSCS) at a private health centre, the indication for the procedure was not known. In her fifth pregnancy she was diagnosed to be Rhesus factor-negative and received anti-D immunoglobulin for prevention of Rh iso-immunization.

For the present pregnancy (sixth), she was registered at the

All India Institute of Medical Sciences, Ansari Nagar, New Delhi 110029, India

ARCHANA S., VIJAY SILAN, SHASHI KANT Centre for Community Medicine

Correspondence to SHASHI KANT; skant76@hotmail.com

© The National Medical Journal of India 2014

TABLE I. Summary of obstetric history

Pregnancy	Antenatal visits	Type of delivery	Outcome
1	None	Full-term normal vaginal home delivery	Live baby boy, 10 years old
2	None	Preterm home delivery at 32 weeks	Baby died after 3 days; history of intense icterus
3	None	Preterm home delivery at 28 weeks	Intrauterine foetal death
4	None	Preterm premature rupture, Preterm delivery by lower segment caesarean section	Intrauterine foetal death
5	None	Preterm hospital delivery at 28 weeks	Intrauterine foetal death
6	Six	Full-term delivery by emergency lower segment caesarean section	Live baby girl with Rh-sensitization

ANC clinic at PHC Dayalpur during her third month of gestation. Since the pregnancy was deemed to be a high-risk one, she was referred to a tertiary healthcare facility, 42 km from the PHC, for booking. However, due to the travel distance and anticipated wage loss the couple refused to follow the advice and insisted that care be provided at the PHC itself. Therefore, regular ANC was provided at the PHC. The patient remained compliant throughout the pregnancy and all trimesters were uneventful till 37 weeks when she abruptly developed pain abdomen, diarrhoea and fever. As examination did not reveal any signs of imminent labour, she was admitted for observation for any signs of initiation of labour. After four hours, she developed intense pain in the lower abdomen with tenderness over the lower uterine area suggestive of imminent scar dehiscence. Anticipating the need for an emergency LSCS and of the baby requiring intensive care, it was decided to refer her immediately to the nearest tertiary healthcare facility for management. She was transported in an ambulance. At the tertiary centre, the indirect Coomb’s test was reactive and anti-D positive titres were high at 1:512. After blood transfusion, her haemoglobin level increased to 12.8 g/dl and the haematocrit increased to 38.6%. An emergency LSCS was done and a live girl child weighing 2750 g was delivered. The baby cried immediately after birth. The baby received phototherapy and exchange transfusions, and was continuously monitored in the neonatal intensive care unit until discharge. A month later, the baby weighed 3100 g and received her scheduled vaccines at the PHC.

DISCUSSION

According to hospital statistics in India, the incidence of Rh-negative pregnancy is 5%–10%.¹⁷ It is estimated that pregnancies in which the mother is Rh-negative and has been sensitized, 10%–12% of such babies would require intrauterine transfusions.¹⁸ Routine antenatal anti-D prophylaxis reduces the incidence of sensitization and hence of haemolytic disease of the newborn and has been shown to be cost-effective.¹⁹ There are many reasons for frequent cases of Rh-sensitization, the foremost being failure to recognize and treat the condition. In southern Asia, over half of all childhood deaths occur in the first 28 days after birth. Good quality antenatal, intranatal and postnatal care could decrease the neonatal mortality rate which in 2011 was 33 per 1000 live-births in India.²⁰ Institutional delivery plays a vital role in this respect. In the case discussed, proper ANC and

institutional delivery would have identified the Rh status and mitigated perinatal deaths. In a secondary data analysis of the demographic health survey, the odds of safe delivery were found to be lower (OR 0.598; 95% CI 0.396–0.902) among poor migrant women who worked away from home at the time of survey compared with women who were not working.²¹ In a survey conducted by us, more than half the mothers (57.1%) reported that they had home delivery at brick kilns or in their native place.

The three-delay model for access to care is applicable here.²² The first is *delay in recognizing the problem*: low awareness about pregnancy-related complications and lack of decision-making, low status of migrant women and fear of costs could be considered. The access to care is a major problem in the case of migrants, as these brick kilns are not covered in the work plan of the ASHA/ANM. Hence, it is not uncommon for women in brick kilns to be unaware of the complications of pregnancy, the benefits of institutional delivery, the conditional cash transfer scheme and *Janani Suraksha Yojana* (JSY). The second is *delay in reaching the health facility*: labourers are not entitled for any means of transportation. In a study by Agarwal *et al.*, only 29.5% of women slum dwellers had arranged any means of transport for birth preparedness.²³ Even though the free ambulance facility is available for a pregnant mother or neonate, in our survey, less than one-fifth of them (18.4%) knew about it. This can be attributed to lack of information–education–communication (IEC) activity targeted at migrants. The third is *delay in receiving adequate care*: even though not applicable in this case, it nevertheless draws some attention. There are 24 049 PHCs in India, envisaged to provide integrated healthcare to the rural population. However, only 38% PHCs are functional 24×7 and PHCs with three staff nurses are even fewer.²⁴ Even at the district-level hospitals, specialized newborn care units (SNCU) are not equipped to manage such neonates.

Assuming that there was no primary and secondary delay, given the system’s functionality, delay in receiving care is bound to occur. Thus, an interplay of these factors exposes this vulnerable subgroup of our population to avoidable morbidity and mortality, which often goes unreported. It is reasonable to expect that this maternal and perinatal mortality goes unnoticed even by the health facility at the native place of the migrants.

POTENTIAL INTERVENTIONS

One of the positive steps towards addressing migration is the Mahatma Gandhi National Rural Employment Guarantee Act, aiming at a strong social safety net for vulnerable groups by providing a fall-back employment source, when other employment alternatives are scarce. This indirectly helps to decrease migration. States such as Bihar are sending fewer agricultural workers to work in Punjab and elsewhere.¹⁰ The foremost requirement is to support migrants towards accessing healthcare, and providing social assistance while they are on the move; for this, migrants should be given an ‘identity during mobility’. There must be a special package to address preventable complications consisting of basic maternal and child health components directly related to reducing mortality. JSY for mothers, which is regular though delayed among the general population,²⁵ must also be made available to migrant mothers. In view of the economically dire condition of migrant workers, there is a need to expedite the processing of JSY. The shorter duration of stay and periodic migration are a hindrance for providing uninterrupted health services. Inadequate official data have reinforced ill-conceived policies on migration. The problem lies in mapping such mobile

communities which should not be missed out from the routine healthcare delivery system. The opportunity should be seized in areas where NGOs are working for issues concerning migrants. As part of the NRHM, ASHAs could be encouraged to cater to migrants as and when they come. ASHAs could be given special incentives for this task.

Various stakeholders need to be involved to develop innovative strategies for tracking migrants and to provide services tailored to their needs. The NRHM has been making a positive impact on the lives of common people in general, but there are segments of population that are at higher health risks and are yet missed out. Till their needs are met, the 'averages' may hide serious health inequity in various segments of population at large.

REFERENCES

- Migration in India 2007–08. NSS 64th round (July 2007–June 2008). National Sample Survey Office. Ministry of Statistics and Programme Implementation. Government of India, June 2010. Available at http://mospi.nic.in/Mospi_New/upload/533_final.pdf (accessed on 9 Apr 2013).
- Census of India: Migration. Available at http://censusindia.gov.in/Census_And_You/migrations.aspx (accessed on 5 Mar 2013).
- Report of the Committee on Unorganized Sector Statistics. National Statistical Commission, Government of India, February 2012. Available at http://mospi.nic.in/mospi_new/upload/nsc_report_un_sec_14mar12.pdf?status=1&menu_id=199 (accessed on 28 Jun 2013).
- Deshinkar P, Aktar S. *Human Development Research Paper 2009/13 Migration and Human Development in India*. United Nations Development Programme Human Development Reports, Research Paper, April 2009. Available at http://hdr.undp.org/en/reports/global/hdr2009/papers/HDRP_2009_13.pdf (accessed on 15 Jul 2012).
- Brick Kilns Performance Assessment: A roadmap for cleaner brick production in India*. Shakti Sustainable Energy Foundation and Climate Works Foundation Supported Initiative. Available at http://www.catf.us/resources/publications/files/Brick_Kilns_Performance_Assessment.pdf (accessed on 14 Mar 2013).
- van den Anker C. *The political economy of new slavery*. New York and Basingstoke: Palgrave Macmillan; 2004. Available at http://www.untag-smd.ac.id/files/Perpustakaan_Digital_2/POLITICAL%20ECONOMY%20The%20political%20economy%20of%20new%20slavery.pdf (accessed on 9 Apr 2013).
- Building and Wood Worker's International (BWWI). *Women brick kiln workers from north-eastern India rescued*. Available at <http://www.bwint.org/default.asp?index=3979> (accessed on 9 Apr 2013).
- Sridhar KS, Reddy AV, Srinath P. *Is it push or pull? Recent evidence from migration in India*. South Asia Network of Economic Research Institutes; June 2010. Available at http://saneinetwork.net/Files/10_04_K_S_Sridhar.pdf (accessed on 9 Apr 2013).
- Ray A. Migrants run into an Aadhaar quandary. *Times of India* 3 May 2013. Available at http://articles.timesofindia.indiatimes.com/2013-05-30/bangalore/39628111_1_aadhaar-card-uidai-enrolment (accessed on 5 May 2013).
- Reed MN. *Meeting the educational needs of seasonal migrant children: An analysis of educational programs at brick kilns in India*. University of Arizona, May 2012. (PhD Thesis)
- Keatinge G, Potter N. Health and environmental conditions in brickworks. *Occup Environ Med* 1949;6:31–44.
- Myers J, Cornell J. Respiratory health of brickworkers in Cape Town, South Africa: Symptoms, signs and pulmonary function abnormalities. *Scand J Work Environ Health* 1989;15:188–94.
- Garg S, Agarwal P, Singh M. Maternal health-care utilization among women in an urban slum in Delhi. *Indian J Commun Med* 2007;32:203.
- National Rural Health Mission, Ministry of Health and Family Welfare, Government of India. Available at <http://nrhm.gov.in/about-nrhm/goals.html> (accessed on 28 Jun 2013).
- ASHA Module 6. National Rural Health Mission. Available at http://nhsrindia.org/pdf_files/resources_thematic/Community_Participation/NHSRC_Contribution/asha%20module%206_english.pdf (accessed on 10 Jun 2013).
- Guidelines for pregnancy care and management of common obstetric complications by Medical Officers*. Maternal and Child Health Division, Ministry of Health and Family Welfare, Government of India. Available at http://jknrhm.com/Guideline/Normal_delivery_and_management_of_obstetric_complications.pdf (accessed on 10 Jun 2013).
- Dutta DC. Special cases. Pregnancy in Rh negative women. In: *D.C. Dutta's textbook of obstetrics*. 4th ed. Kolkata: New Central Book Agency; 2001.
- Routine antenatal anti-D prophylaxis for women who are rhesus D negative (technology appraisal guidance 156). Available at <http://www.nice.org.uk/nicemedia/pdf/TA156Guidance.pdf> (accessed on 23 Jul 2012).
- Pilgrim H, Lloyd-Jones M, Rees A. Routine antenatal anti-D prophylaxis for RhD-negative women: A systematic review and economic evaluation. *Health Technol Assess* 2009;13.
- National Rural Health Mission. Brief note on child health. NRHM. 2011. Available at http://www.mohfw.nic.in/NRHM/Documents/Brief_Note_on_CH_Nov_2011.pdf (accessed on 15 Jul 2012).
- Singh P, Rai R, Singh L. Examining the effect of household wealth and migration status on safe delivery care in urban India, 1992–2006. *PLoS ONE* 2012;7:e44901.
- Operational Guidelines on Maternal and Newborn Health. National Rural Health Mission. Available at <http://rajswasthya.nic.in/FIRST%20REFERRAL%20UNIT%2010.02.11/Guidelines/Maternal%20and%20Newborn%20Operational%20Guidelines%20-%20Final.pdf> (accessed on 14 Apr 2013).
- Agarwal S, Sethi V, Srivastava K, Jha PK, Baqui AH. Birth preparedness and complication readiness among slum women in Indore city, India. *J Health Popul Nutr* 2010;28:383–91.
- Rural health statistics in India 2012. Statistics Division, Ministry of Health and Family Welfare, Government of India. Available at <http://nrhm.gov.in/images/pdf/publication/RHS-2012.pdf> (accessed on 28 Jun 2013).
- Sixth Common Review Mission--Report. National Rural Health Mission. 2012. Available at http://nrhm.gov.in/images/pdf/monitoring/crm/6th-crm/report/6th_CRM_Main_Report.pdf (accessed on 28 Jun 2013).