

Newborn Care Practices and Health Seeking Behavior in Urban Slums and Villages of Anand, Gujarat

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Health status of neonates in urban slums has not been studied in smaller towns. A questionnaire was administered to 154 families of 10 urban slums of Anand (population - 197351) and 160 families from 6 villages of Anand district. The socioeconomic and education status of the slum dwellers versus rural participants were significantly lower ($P < 0.001$). Antenatal care (79.9 vs 94.4%, $P < 0.001$), hospital delivery (82.5 vs 93.8%, $P = 0.002$), neonatal follow-up (27.9 vs 78.8%, $P < 0.001$), health seeking (56.5 vs 91.3%, $P < 0.001$), essential newborn care and exclusive breastfeeding (6.5 vs 85.6%, $P < 0.001$) were also lower in urban slums, as compared to villages. Care seeking was low in urban slums, Hindus and illiterate mothers. Health care and socioeconomic status of neonates in slums of smaller cities is poorer than in surrounding villages.

Key words: Newborn care, Urban slum, India.

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Infant and neonatal mortality rates have declined in India but are relatively higher in urban slums and rural areas [1]. About one-third of India's urban population resides in slums and squatters and this is expected to rise [2]. Urban health care indicators are better than rural areas but these numbers disregard the differences between urban rich and poor slum dwellers [3]. The government of India has an elaborate and variably functioning healthcare delivery system in the rural areas. Urban slum areas lack such healthcare systems. Urban slums were compared to surrounding rural areas for aspects related to newborn care and care seeking. Such comparisons will put in context the poor status of newborn health and health seeking in slums of even smaller cities and give direction to policy making in the future.

METHODS

Anand district consists of 8 talukas, 10 cities and 350 villages with a population of 2,090,276 (national average is 1,890,927). Anand city, with a population of 197,351 (national average 450,839), ranks 233rd in 497 cities in India [4].

Families with infants <9 months were included through door to door survey following informed consent. Total of 156 families (more than 90% of eligible families) in slums were approached. Two families refused participation. Village survey followed and 160 families

were recruited across 6 villages selected by random process from eligible 27 villages with >30 estimated deliveries per year.

Bilingual (English, Gujarati) questionnaire prepared by investigators was validated and pre-tested. Health workers administering the questionnaire were trained and monitored by investigators. Care seeking behavior was present if mother had taken at least one antenatal care (ANC) and one neonatal follow up. Families were contacted a day prior to survey to ensure completeness of data. Study was conducted from May 2011 to September 2011. Institutional Human Research Ethics Committee granted approval.

Baseline data were expressed by frequencies, proportions and mean (SD). Associations were calculated between relevant nominal variables using chi-square test. Multivariable logistic regression was applied to determine individual effect of factors influencing health seeking behavior and hospital delivery status. Analysis was carried out using SPSS 14 (SPSS Inc. USA).

RESULTS

Gender distribution of participants was similar across study areas. Most mothers from slums were illiterate (44.2%) whereas 83.7% mothers from villages had at least primary education. Socioeconomic status and living conditions of the village participants were better than the slum participants (**Web Table I**).

Healthcare utilization, antenatal care, hospital delivery, neonatal follow up, health seeking behavior was better in village participants. Harmful cultural practices like administration of non-essential syrups, and *Kajal* application in eye were more common in slum participants, whereas substance application over umbilicus was more common in village participants. Bathing baby at birth was equally prevalent (31.2% vs 32.5%) whereas bottle feeding was not very common (8.6% vs. 12.5%) (**Table I**).

Early essential newborn care and exclusive breast feeding were better followed in village participants. (**Table II**). There was no difference in knowledge about neonatal danger signs. Only 2.8 % of total participants had complete knowledge about neonatal danger signs. More than 50 % of the participants were not aware of a single danger sign (data not shown).

Multiple logistic regression model revealed that lack of care seeking behavior was common in Slums (Odds Ratio 6.08, 95% CI 3.11,11.89, $P<0.0001$), Hindus (OR 8.71, 95% CI 1.11,68.07, $P=0.04$) and Illiterate mothers (OR 4.71, 95% CI 2.06,10.80, $P<0.0001$). The predictive value of the model was good (81.2% correct

classification). Home deliveries were more common if ANC was not taken (OR 9.08, 95% CI 3.89, 21.20, $P<0.0001$) and if mother's education was restricted to primary education (OR 8.97, 95% CI 1.96,41.11, $P=0.01$). The predictive value of this model was very good (90.1% correct classification).

DISCUSSION

Present study reveals wide socioeconomic gap between slums and villages. This gap exists even for a smaller town with a population smaller than the national average for a city. There is lack of properly functioning and structured healthcare delivery system in urban slums *vis-à-vis* affluent urban and rural areas [5-7].

Proximity of the slums to two multispecialty hospitals and smaller private hospitals did not improve utilization of services. Urban slum dwellers are ignorant about their health needs and also lack attitude for seeking healthcare. There is lack of basic sanitation (72%) and water supply facility (44.8%) in most slum residents as seen earlier [8, 9]. Healthcare acceptability of government infrastructure was low in both areas in contrast to earlier studies [10].

Neonatal follow-up and care of infants requiring medical attention was provided by unqualified personnel or not taken in 72% of slum areas. Similar results were

TABLE I MOTHER AND CHILD HEALTH CARE DETERMINANTS

| Variable Name | Slum N=154 n(%) | Village N=160 n(%) |
|--|-----------------------|--------------------------|
| Home delivery [†] | 27 (17.5) | 10 (06.3) |
| ANC taken* | 123(79.9) | 151(94.4) |
| Neonatal follow up* | | |
| Not done | 62 (40.3) | 6 (03.8) |
| To unqualified practitioner | 49 (31.8) | 28 (17.6) |
| To pediatrician | 43 (27.9) | 126(78.8) |
| If hospital delivery whether it was | | |
| Government hospital | 29 (22.8) | 41 (27.3) |
| Non govt. hospital | 98 (77.2) | 109(72.7) |
| If ANC taken from | | |
| Government hospital | 26 (21.2) | 25 (16.5) |
| Non governmental hospital | 97 (78.8) | 126(83.4) |
| Non essential syrups administered* | 50 (32.5) | 5 (03.0) |
| Substance applied over umbilicus* | 7 (04.6) | 30 (22.1) |
| Bottle feeding | 13 (08.6) | 20 (12.5) |
| Kajal application in eyes [#] | 55 (35.7) | 36 (22.5) |
| Bathing baby at birth | 48 (31.2) | 52 (32.5) |

* <0.001; # <0.05; † <0.01.

TABLE II ESSENTIAL AND GENERAL NEWBORN CARE

| Variable and Response | Slum N=154 n(%) | Village N=160 n(%) |
|---|-----------------------|--------------------------|
| Baby dried immediately [#] | 132(85.7) | 153(95.6) |
| When was breastfeeding started [#] | | |
| within half hour | 90(58.4) | 113(70.6) |
| 1 h to 2 h | 38(24.7) | 21(13.1) |
| 3 h to 6 h | 3(01.9) | 1 (0.6) |
| After 6 h | 0 | 3 (1.9) |
| 2nd day onwards | 13 (8.4) | 16(10.0) |
| 3rd day onwards | 10 (6.5) | 6 (3.8) |
| Baby recieved Kanagroo mother care* | 1 (0.6) | 28(17.5) |
| Handwashing done before handling baby* | 5 (3.2) | 118(73.8) |
| Mother and child kept together | 150(97.4) | 148(92.5) |
| Baby was clothed properly | 131(85.1) | 137(85.6) |
| Baby exclusively breast fed for 6 months* | 10 (6.5) | 137(85.6) |

* $P<0.001$; # $P<0.05$.

WHAT THIS STUDY ADDS

- Villages have better access to neonatal health care than urban slums even within smaller geographical areas.

found in a multicentre study [11]. Exclusive breastfeeding till 6 months was given in 6.5% of slum participants vs 85.6% in village participants. This was similar to a previous study from Gwalior [12]. Education of immediate health care providers and mothers in basic neonatal care is required in urban slums as similar provisions exist in villages under various government efforts [11]. Bathing baby at birth is equally prevalent in slums and villages at 31.8% which is much lower than slums in Dhaka or Lahore (86%) [13,14]. Bottle-feeding is equally prevalent in both slum (8.6%) and village participants (12.5%), which is much lower than seen in the Gwalior study [12].

This study describes a wide gap in newborn practices in slums of a smaller town with better practices in surrounding villages. Slum dwellers were 6 times less likely to seek care. Not taking ANC and being illiterate was associated with home deliveries. A single district study is a limitation of this study but similar gaps between rural and urban health settings are likely in rest of Gujarat as well as India. Detailed assessment of reasons for poor health care seeking behavior is required. Policy planners need to plan for urban slums while allocating funding for health in urban areas.

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REFERENCES

1. United Nations, Department of Economic and Social Affairs. World Population Prospects, the 2010 Revision. <http://esa.un.org/wpp/Other-Information/faq.htm>. Accessed on 28 September 2011.
2. Agarwal S, Sethi V, Srivastava K, Jha PK, Baqui AH. Newborn care practices in urban slums: Evidence from central India. *J Neonatal Perinatal Medicine*. 2009;2:277-7.
3. International Institute for Population Sciences (IIPS) and Macro International. 2007. National Family Health Survey (NFHS-3), 2005–06: India: Volume I. Mumbai: IIPS.
4. Census of India. New Delhi: Registrar General of India; 2011. Available from: <http://www.census2011.co.in/city.php>. Accessed on 8 May, 2012.
5. Urban Health and Resource Centre Report, New Delhi. State of Urban Health in Delhi. Available from: www.uhrc.in/name-CmodsDownload-index-req-getit-lid-63.html2007. Accessed on 28th September, 2011.
6. Sclar ED, Garau P, Carolini G. The 21st century health challenge of slums and cities. *Lancet*. 2005;365:901-3.
7. Gupta P, Murali MV, Seth A. Epidemiology of diarrhea in urban slums. *Indian Pediatr*. 1998;35:147-51.
8. Health and Family Welfare Department, Government of West Bengal. Five Year Urban Health Proposal for Bally (Under RCH II), West Bengal, Kolkata. Government of West Bengal: 2004.
9. Swami HM, Thakur JS, Gupta M, Bhatia SP. Improving environmental conditions of a slum in Chandigarh by an awareness campaign. *J Environ Sci Eng*. 2004;46:252-6.
10. Gupta M, Thakur JS, Kumar R. Reproductive and child health inequities in Chandigarh Union Territory of India. *J Urban Health*. 2008;85:291-9.
11. Srivastava NM, Awasthi S, Mishra R. Neonatal Morbidity and care-seeking behavior in urban Lucknow. *Indian Pediatr*. 2008;45:229-32.
12. Tiwari R, Mahajan PC, Lahariya C. The determinants of exclusive breast feeding in urban slums: a community based study. *J Trop Pediatr*. 2009;55:49-54.
13. Moran AC, Choudhury N, Uz Zaman Khan N, Ahsan Karar Z, Wahed T, Faiz Rashid S, *et al.* Newborn care practices among slum dwellers in Dhaka, Bangladesh: a quantitative and qualitative exploratory study. *BMC Pregnancy Childbirth*. 2009;9:54.
14. Aziz N, Akhtar S, Kaleem R. Newborn care practices regarding thermal protection among slum dwellers in rachna town, Lahore, Punjab. *Annals of King Edward Medical University*, 16 July, 2010. Available from: <http://www.annalskemu.org/journal/index.php/annals/article/view/157>. Accessed on 12 May, 2012.