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Maternal and child health care in an underprivileged area of Bangalore city: Identifying the gaps in the continuum of care

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ABSTRACT

Background

With over 100 million Indians living in urban slums and high child mortality among low-income groups, focusing on maternal and child health (MCH) among urban underprivileged is vital, if India is to achieve the fourth and fifth Millennium Development goals.

Objectives

To identify the gaps in the MCH Continuum of care, by assessing coverage and quality of Maternal and Child Health Services in an urban underprivileged area of Bangalore City.

Methods

A survey was conducted in an urban slum of Bangalore City, using systematic random sampling. A total of 178 subjects were interviewed with a pre-tested questionnaire. 88 were mothers who delivered in the last one year (to assess maternal care services), and 90 were mothers of a child aged 12-23 months (to assess immunization coverage). Breastfeeding practices and care during childhood illness were documented in both groups.

Results

Though institutional delivery rate was 97.7%, only 34.1% mothers had received full antenatal care. The quality of antenatal and postnatal services was poor, practices like prelacteal feeds and delayed initiation of breastfeeding were common. Less than 40 % of children were exclusively breastfed for at least 6 months. Only 53% of children aged 12-23 months were fully immunised. Primary immunisation drop-out rates were high. Mothers' knowledge regarding vaccines was poor. Children with diarrhea received less fluids and food and only 61% received ORS.

Conclusion

This study identified the following gaps in the MCH Continuum of Care- lack of IFA consumption, poor quality of antenatal and postnatal care, high immunisation dropout rates, erroneous breastfeeding practices and inadequate care during diarrhoea. Further research may identify potential solutions to bridging these gaps in MCH care.

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INTRODUCTION

India accounts for 2 million deaths among children under the age of five[1] and 50,000 maternal deaths each year[2], which is the highest total for any country. Roughly 100 million urban residents in India live in slums[3] and NFHS data indicates high under-five mortality among low income groups, even in high performing states like Karnataka.[4] Therefore focusing on reduction in maternal and childhood mortality among the urban underprivileged is vital if India has to achieve its fourth and fifth Millennium Development Goals by 2015.[5]

Indian government is focused on providing "Continuum of Care" for mothers and children, following the lifecycle approach, advocating a model of primary health care that embraces every stage of maternal, newborn and child health - antenatal care, care at childbirth, postnatal care, care of the newborn, infant and young child feeding, immunisation and management of common childhood illnesses.[6] High coverage levels of services along the MCH Continuum of care are effective in reducing maternal and child mortality.[7] However, coverage levels of these essential services are likely to be way below the national or state averages in urban slums.[8] Identifying gaps and inequities in coverage and quality of services along the MCH continuum of care will improve service delivery of essential interventions and packages.[6] This study aims to identify the gaps in the MCH Continuum of care by assessing the coverage and quality of Maternal and Child Health Services in an urban underprivileged area of Bangalore City.

METHODS

This was across-sectional study carried out in a designated slum of Bangalore city with a population of around 5000. Sample size was calculated with 5 % alpha error and 80% power. There were two subject groups under consideration: Taking into account that coverage levels are likely to be below the state averages in urban slums,[6] a sample size of 78 mothers who delivered within the last one year was derived, assuming expected full ANC coverage of 25% (to assess maternal health care), and a sample size of 87 mothers of children aged 12-23 months (to assess immunisation coverage) was derived, assuming expected immunisation coverage of 65%[i].Infant and young child feeding and care during childhood illness were assessed in both groups. Using available population data, systematic random sampling was done separately for the two study groups with a sampling interval of two. Mothers were interviewed after obtaining written informed consent, with the help of a pre-tested interview schedule adapted from UNICEF Coverage Evaluation Survey 2009 [9]. If informed consent was not given or if mother was not available, then the next eligible subject was approached. Descriptive statistics were reported using mean and standard deviation, numbers and percentages. Chi square was used to test the association between study variables. SPSS V17.0 was used to perform all the statistical analyses and p value <0.05 was considered significant. Ethical Clearance was obtained from the Institutional Ethical Review Board.

RESULTS

A total of178 mothers were included in the study. Maternal care which includes antenatal care, care during delivery and postnatal care was assessed among 88 mothers who delivered in the last one year. Immunization coverage was assessed among 90 mothers having a child aged 12-23 months. Infant and young child feeding and care during childhood illness were documented in all the 178 mothers. Majority (89.3%) of households belonged to low socioeconomic class and the rest belonged to lower middle class as assessed by Modified BG Prasad Scale. Fifty seven percent of the mothers were Hindus, 30.3% and 13% were Christians and Muslims respectively. Nearly half of the mothers (45%) were illiterate and only 11.2% were gainfully employed.

Maternal Care

Among the 88 mothers who delivered in the last one year, the average age of the mothers was 23.5± 3.1 years. Of them, 37 (42%) were primipara. The last pregnancy of all 88 women had resulted in live births.

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Antenatal Care

All mothers (100%) had registered their pregnancies and had received antenatal care (ANC). 72 (81.8%) had sought ANC at a government health facility, while 16 (18.2%) had accessed private health care. Fifty nine (67%) had their first antenatal visit within the first trimester (early registration) with no significant association with maternal characteristics compared to late registration (Table 1).

Table 1 Registration of Pregnancy and Full ANC Received

N=88	Registration of Pregnancy*		Full ANC*	
	Early (≤ 3 mths) 59 (67%)	Late (>3 mth) 29 (33%)	Received 30 (34.1%)	Not Received 58 (65.9%)
Age				
≤ 20 Years	14 (70.0)	6 (30.0)	4 (20.0)	16 (80.0)
21-25 Years	26 (62.8)	16 (37.2)	15 (34.9)	28 (65.1)
≥26 Years	18 (72.0)	7 (28.0)	11 (44.0)	14 (56.0)
Religion				
Hindu	35 (70.0)	15 (30.0)	15 (30.0)	35 (70.0)
Muslim	8 (72.7)	3 (27.3)	2 (18.2)	9 (81.8)
Christian	16 (59.3)	11 (40.7)	13 (48.1)	14 (51.9)
Education				
No School	10 (58.8)	7 (41.2)	9 (52.9)	8 (47.1)
Primary & Middle	18 (72.0)	7 (28.0)	8 (32.0)	17 (68.0)
High School & above	31 (67.4)	15 (32.6)	13 (28.3)	33 (71.7)
Parity				
Primipara	27 (73.0)	10 (27.0)	14 (37.8)	23 (62.2)
Multipara	32 (62.7)	19 (37.3)	16 (31.4)	35 (68.6)

Reported as number with parenthesis percentages
**No significant association between variables*

Majority of the mothers (97.7%) had 3 or more ANC visits during the last pregnancy. However, only 34.1% of them had received Full Antenatal care. Full antenatal care for the purpose of this study was taken to be at least 3 ANC visits, two doses or one booster of Tetanus toxoid vaccine (TT) and consumption of at least one hundred tablets of Iron and Folic acid (IFA) during pregnancy. All mothers received 2 doses (or 1 booster dose) of Tetanus Toxoid injections. 87 (99%) had received or purchased IFA tablets, but only 30 (34.1%) reported consuming 100 or more IFA tablets. 67 mothers (77%) had procured free IFA from a government health facility. The rest had purchased IFA from a private health facility or a pharmacy store. Mothers who had purchased the IFA from a private health facility or pharmacy were more significantly more likely to have consumed 100 or more IFA tablets (p= 0.005) (Table 2). Among mothers who received any ANC, only 33% received all the basic components of ANC, i.e. their weight and height measured, blood pressure checked, abdomen examined and blood and urine tested. Instructions for consuming IFA during pregnancy was received by 96.6% mothers, while only 7(8%) received advice on need for institutional delivery, breast feeding, keeping the baby warm, nutrition and family planning. Only 20.5% mother's availed supplementary nutrition for pregnancy from Anganwadi, of these 61% received the nutrition for 3 months or more.

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Table 2 Consumption of IFA during Pregnancy

N=87	IFA Consumption During Pregnancy		P Value
	<100 IFA 57 (65.5%)	≥100 IFA 30 (34.5%)	
Age			
≤ 20 Years	16 (80.0)	4 (20.0)	0.199
21-25 Years	26 (65.1)	15 (34.9)	
≥26 Years	13 (54.2)	11 (45.8)	
Religion			
Hindu	35 (70.0)	15 (30.0)	0.105
Muslim	9 (81.8)	2 (18.2)	
Christian	13 (50.0)	13 (50.0)	
Education			
No School	7 (43.8)	9 (56.3)	0.122
Primary & Middle	17 (68.0)	8 (32.0)	
High School & above	33 (71.7)	13 (28.3)	
Parity			
Primipara	23 (62.2)	14 (37.8)	0.571
Multipara	34 (68.0)	16 (32.0)	
Registration of Pregnancy			
Early Registration	36 (61.0)	23 (38.9)	0.200
Late Registration	21 (75.0)	7 (25.0)	
Procured IFA From			
Government Health Facility	49 (73.1)	18 (26.9)	0.005
Private Health Facility/Pharmacy	8 (40.0)	12 (60.0)	

Reported as number within parenthesis percentages;
P value using chi-square test

Care during delivery and post natal Care

Eighty two percent had delivered in a government health facility. Seventy two women (81.8%) had a normal delivery and 16 (18.2%) were delivered by Caesarean Section. There were 2 home deliveries conducted by a relative of the mother, who reportedly had no time to reach the health facility. All mothers had at least one postnatal care visit (PNC) within 48 hours of delivery. 75 (85.2%) of the mothers and their newborns had 3 or more PNC visits in the first week after delivery. 13 (14.8%) mothers were discharged from the health facility before 48 hours. Only 44(50%) of the mothers, who had completed 6 weeks of post natal period, had received a 6th week PNC checkup. There was a significant association between PNC visit at 6 weeks with education of the mother (p=0.046) (Table 3). Only 10 (11.4%) mothers had their blood pressure checked and abdomen and perineum examined at least once during PNC checkup in the first week after delivery. During PNC visits, 80 (90.8%) mothers were counselled about breast-feeding, while only 28 (31.8%) of them received advice on keeping the baby warm, immunisation, nutrition, IFA consumption and family planning.

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Table 3 Post Natal Check Up at 6 Weeks after Delivery

N=80	Post Natal Check Up at 6 Weeks After Delivery		P Value
	Yes 40 (50%)	No 40 (50%)	
Age			
≤ 20 Years	7 (41.2)	10 (58.8)	0.609
21-25 Years	21 (55.3)	17 (44.7)	
≥26 Years	12 (48.0)	13 (52.0)	
Religion			
Hindu	22 (48.9)	23 (51.1)	0.794
Muslim	6 (60.0)	4 (40.0)	
Christian	12 (48.0)	13 (52.0)	
Education			
No School	4 (23.5)	13 (76.5)	0.046
Primary & Middle	12 (60.0)	8 (40.0)	
High School & above	24 (55.8)	19 (44.2)	
Parity			
Primipara	19 (59.4)	13 (40.6)	0.171
Multipara	21 (43.8)	27 (56.3)	
Registration of Pregnancy			
Early Registration	36 (61.0)	23 (38.9)	0.200
Late Registration	21 (75.0)	7 (25.0)	
Procured IFA From			
Government Health Facility	49 (73.1)	18 (26.9)	0.005
Private Health Facility/Pharmacy	8 (40.0)	12 (60.0)	

Reported as number within parenthesis percentages;
P value using chi-square test

Child Care

Immunization

Out of 90 mothers with children aged 12-23 months, the average age of the mothers was 25.0 ± 3.6 years and 70% of them were literate. 38 (42.2%) of the children were first-born, while 52 (57.8%) were of birth order 2 or more. Knowledge of vaccines was assessed: only 26 (28.9%) could name all 4 vaccines (BCG, DPT, OPV and Measles), while 7 (7.8%) could not name a single vaccine. All the 90 children (100%) had received at least one dose of any vaccine and80 (88.9%) had received vaccine from a government health facility. Immunisation card was seen for 54 (60%) children and53.3% were "Fully Immunised". (Fully immunised means children who have received one dose of BCG, 3 doses of DPT and OPV and one dose of measles, excluding polio zero dose). Mothers who could correctly name all 4 of the vaccines given in infancy and who possessed an immunization card were significantly more likely to have a fully immunized child ($p<0.01$) (Table 4). The highest coverage was for BCG vaccine (100%) and the lowest was for DPT-3 and Measles vaccine (66.7%). *See figure 1*. BCG- Measles Dropout Rate was found to be 40%. DPT 1 to DPT 3 Dropout Rate was 30.2%. Out of 39 children aged 18-23 months, only 9 (23%) had received the DPT and OPV Booster dose and 13 (33%) had received the second dose of Vitamin A. In the last one year, 3 (3.3%) children had not received any pulse polio immunisation and only 65 (72.2%) children had received polio drops in both rounds of the National Pulse Polio program. Only 4 (4.4%) children had received optional vaccines like MMR, HiB, and Chickenpox.

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Table 4 Full Immunization among Children Aged 12-23 Months

N=90	Fully Immunize (BCG+DPT 3+OPV 3 +Measles)		P Value
	Yes 48 (53.3%)	No 42 (46.7%)	
Age			
≤ 20 Years	4 (36.4)	7 (63.6)	0.298
21-25 Years	24 (51.1)	23 (48.9)	
≥26 Years	20 (62.5)	12 (37.5)	
Religion			
Hindu	26 (50.9)	25 (49.0)	0.866
Muslim	7 (58.33)	5 (41.7)	
Christian	15 (55.6)	12 (44.4)	
Education			
No School	8 (47.1)	9 (52.9)	0.537
Primary & Middle	19 (61.3)	12 (38.7)	
High School & above	21 (50.0)	21 (50.0)	
Gender			
Male	25 (55.6)	20 (44.4)	0.673
Female	23 (51.1)	22 (48.9)	
Birth Order of the Child			
1	18 (47.4)	20 (52.6)	0.332
2 or more	30 (57.7)	22(42.3)	
Mother can name all the 4 vaccines given in first year			
Yes	20 (76.9)	6 (23.1)	0.004
No	28 (43.8)	36 (56.3)	
Immunization Card			
Seen	36 (66.7)	18 (33.3)	0.002
Not Seen	12 (33.3)	24 (66.7)	
Place where the child received most of the vaccination			
Government Health Facility	41 (51.25)	39 (48.75)	0.327
Private Health Facility/Pharmacy	7 (70.0)	3 (30.0)	

Reported as number within parenthesis percentages;
P value using chi-square test

Infant and young child feeding

All the 178 children aged 0 -23 months in this study had ever been breast fed. Only 96 (53.9%) of the babies were put to the breast within 1 hr. Primiparous mothers were significantly less likely to initiate breast feeding within 1 hour of delivery. A larger proportion of early initiation (61%) was practiced among those babies who had not received a prelacteal feed. However, this was not statistically significant. (Table 5).

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Table 5 Initiation of Breast Feeding

N=178	Initiation of Breast Feeding		P Value
	< 1 hour of delivery 96 (53.9%)	≥1 hour after delivery 82 (46.1%)	
Age			
≤ 20 Years	14 (43.8)	18 (56.3)	0.174
21-25 Years	54 (60.7)	35 (39.3)	
≥26 Years	28 (49.1)	29 (50.9)	
Religion			
Hindu	59 (58.4)	42 (41.6)	0.389
Muslim	11 (47.8)	12 (52.2)	
Christian	26 (48.2)	28 (51.9)	
Education			
No School	21 (61.8)	13 (38.2)	0.571
Primary & Middle	30 (53.6)	26 (46.4)	
High School & above	45 (51.1)	43 (48.9)	
Gender			
Male	51 (54.26)	43 (45.74)	0.927
Female	45 (53.57)	39 (46.43)	
Parity			
Primipara	33 (44.6)	41 (55.4)	0.035
Multipara	63 (60.6)	41 (39.4)	
Prelactal Feed			
Yes	50 (48.54)	53 (51.46)	0.091
No	46 (61.33)	29 (38.67)	

Reported as number within parenthesis percentages;
P value using chi-square test

103 (57.9%) babies had received a pre-lacteal feed, of which sugar water was the most common pre- lacteal feed (69.9%), followed by plain water (15.53%), honey (11.65%) and other milk (9.8%). Majority (80.9%) of the mothers had fed colostrum to their baby. Exclusive breastfeeding for at least 6 months was assessed only among those children who had completed 6 months of age. Among 138 children aged 6 – 23 months, 55 (39.8%) had been exclusively breast fed for at least 6 months. Primiparous mothers were significantly less likely to practice exclusive breast feeding for at least 6 months (p=0.018) (Table 6).

Table 6 Duration of Exclusive Breast Feeding

N=138	Duration of Exclusive Breast Feeding		P Value
	< 6 months 83 (60.2%)	≥6 months 55 (39.8%)	
Age			
≤ 20 Years	16 (72.7)	6 (27.3)	0.419
21-25 Years	39 (57.4)	29 (42.7)	
≥26 Years	28 (58.3)	20 (41.7)	
Religion			
Hindu	52 (65.8)	27 (37.2)	0.125
Muslim	10 (66.7)	5 (33.3)	
Christian	21 (47.7)	23 (52.3)	

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Education			
No School	12 (46.2)	14 (53.9)	0.262
Primary & Middle	26 (61.9)	16 (38.1)	
High School & above	45 (64.3)	25 (35.7)	
Gender			
Male	46 (60.5)	30 (39.5)	0.919
Female	37 (59.7)	25 (40.3)	
Parity			
Primipara	27 (48.2)	29 (51.8)	0.018
Multipara	56 (68.3)	26 (31.7)	
Prelactal Feed			
Yes	54 (60.0)	36 (40.0)	0.962
No	29 (60.4)	19 (39.6)	

Reported as number within parenthesis percentages;
P value using chi-square test

Complementary feeding practice was assessed among 112 children who had completed 9 months of age. Complementary feeds were introduced at the right age for 56 (50%) children. Too-early introduction of complementary feeds, i.e. before 6 months of age was seen in 32 (28.5%) infants and too-late introduction of complementary feeds i.e. after 9 months was recorded for 24 (21.4%) children. Only 50% of children aged 12-23 months are being currently breastfed.

Care during childhood illness

To assess care during common childhood diseases like diarrhoea and acute respiratory infection (ARI), the mothers of the 178 children aged 0-23 months were asked if the child had diarrhoea, fever or cough within the last 2 weeks. About 21.3% mothers reported that their child had diarrhoea in the last 2 weeks. The proportion of children with diarrhoea significantly increased with the age of the child (p=0.004). ORS was given in 63.1% children with diarrhoea. During the diarrhoeal episode, most commonly, mothers gave the child plain water to drink (71%), followed by fruit juice (23.7%). Only 4 (10.5%) offered the child to drink more fluids than usual, and 15 (39.4%) offered less fluids than usual. Most of them (76%) continued to receive breast feeds as usual, however 20% of the mothers reported reducing breastfeeds during the diarrhoeal episode. More than half 27 (71%) of the mothers sought treatment from private health facility when the child had diarrhea. About 77 (43.2%) mothers reported cough, fever or both, of whom 73 (95%) sought treatment for the child. Most of the children (74%) were taken to a private health facility.

DISCUSSION

This study in an urban underprivileged area revealed some key gaps in maternal and child health care across the continuum of care.

Though all the mothers received some antenatal care, only 67 % were registered in the first trimester. While this proportion is slightly higher than rural North India (53.7%),[10] it is much lower compared to 82.2 % in Karnataka State [9]. This could be due to the local cultural belief that pregnancy should be revealed to others only after completing three months of gestation.

The quality of antenatal care received by mothers in the study was poor. Though 97.7 % mothers had 3 or more ANC check-ups, only a third of them reported having had all the following examined at least once – weight, height, blood pressure, abdomen, breast, blood and urine. Poor quality of antenatal care has been similarly been found in other developing countries.[11] Primary health care providers often focus on completion of antenatal visits, TT immunization and provision of IFA tablets, rather than other essential components of ANC like screening for high risk and counseling the mother. Only 8% of the women in the present study received advice on need for institutional delivery, breast feeding, keeping the baby warm, nutrition and family planning. This was

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much lower than the 61 to 75% who received such advice in a study in rural India.[12] This could be due to the fact that most women received antenatal care at government primary urban health centres, where they may be less likely to receive specific advice than their counterparts in the higher level health facilities.[14]

Even though nearly all the mothers received IFA tablets and counselling about IFA during pregnancy, only a third of them actually consumed more than one hundred IFA tablets. This is important, given that the most commonly reported problem in pregnancy in this study was excessive tiredness, which is a symptom of anaemia. A study in rural Delhi has shown similar level of non-compliance with IFA tablets.[13] It was seen in the present study, that women who purchased IFA from a private health facility or pharmacy were more likely to have consumed 100 or more IFA tablets. This could have been due to the erratic supply of IFA at the government health facilities, complaints by the women that government IFA has more gastric side-effects and the fact that free medication is often not valued. There are also cultural beliefs against consuming medications during pregnancy, fears that taking too much iron may cause too much blood or a big baby, making delivery more difficult.[14]

The present study found that antenatal TT coverage was 100 %, as compared to 92.5% for Karnataka Urban area and nearly all mothers had 3 or more ANC visits, which again was higher than the State figure of 90.1%, (see figure 1). However, Full ANC coverage was found to be only 34.1% in the present study which is below national and state coverage levels [9], mainly due to the poor consumption of IFA tablets among women in this study. The supplementary nutrition at the Anganwadi was also poorly utilized (20%). This was found to be much lower than in a similar setting in Raipur city.[15] This may have been due to lack of awareness about its availability, erratic supply or issues with quality and taste of the food.

Though other studies have found institutional delivery rates to be low among those of low socio-economic status[16], in our study the institutional delivery rate (97.7%), was much higher than national (72.9%) and state (92.4%) figures. This might be attributed to awareness, availability and easy accessibility to health facilities.

All the women had PNC checkups within 48 hours after delivery, and majority had at least 3 PNC visits within the first week. This was much higher than the DLHS 2007-08 finding that only 44% women received any PNC within 48 hours of delivery[17] and 60% within 10 days[9]. This difference was due to high institutional delivery rate in the present study. Again here, as with ANC, the quality of PNC was poor. Only 11.4% mothers had their BP checked and abdomen and perineum examined at least once during the first postpartum week. Less than a third received advice on keeping the baby warm, immunisation, nutrition, IFA consumption and family planning. These are all essential components of postnatal care[18] which was found to be lacking in the present study. Only half the women had a postnatal check-up at 6 weeks. While this figure may be higher than in some developing countries[19], it is still inadequate. Culturally, while the phenomenon of birth is given much importance, postnatal visits are often ignored. Considering that the baby is brought for immunization at 6 weeks, it is a missed opportunity for the health system if the mother has not received a postnatal check up at the same time.

In the present study, the immunisation coverage rates among children aged 12-23 months, for individual vaccines were higher than the national rates, but lower than those of Karnataka State-Urban area[9] (Figure 1). However, OPV-3, DPT-3, Measles and "Full immunization" coverage rates were even lower than the national rates. BCG to Measles Dropout Rate of 40%, and DPT 1 to DPT 3 Dropout Rate of 30.2%, was higher than that for India (14.7% and 13.3% respectively) and far higher than that for Karnataka State (both 7.4%).[9] Similar pattern of an urban slum having lower immunization coverage than the rest of the state was seen in a study in slums of Surat.[20] The mother's ability to name all four vaccines which an infant must receive in its first year, was far lower in our study (28.9%) as compared to the national figure of 58%.[9] Since these mothers as well as mothers who were in possession of the child's immunization card were found to have significantly

higher proportion of fully immunized children, it implies that improvement in the knowledge of vaccines and stressing on preserving the immunization card are important predictors for full immunization.

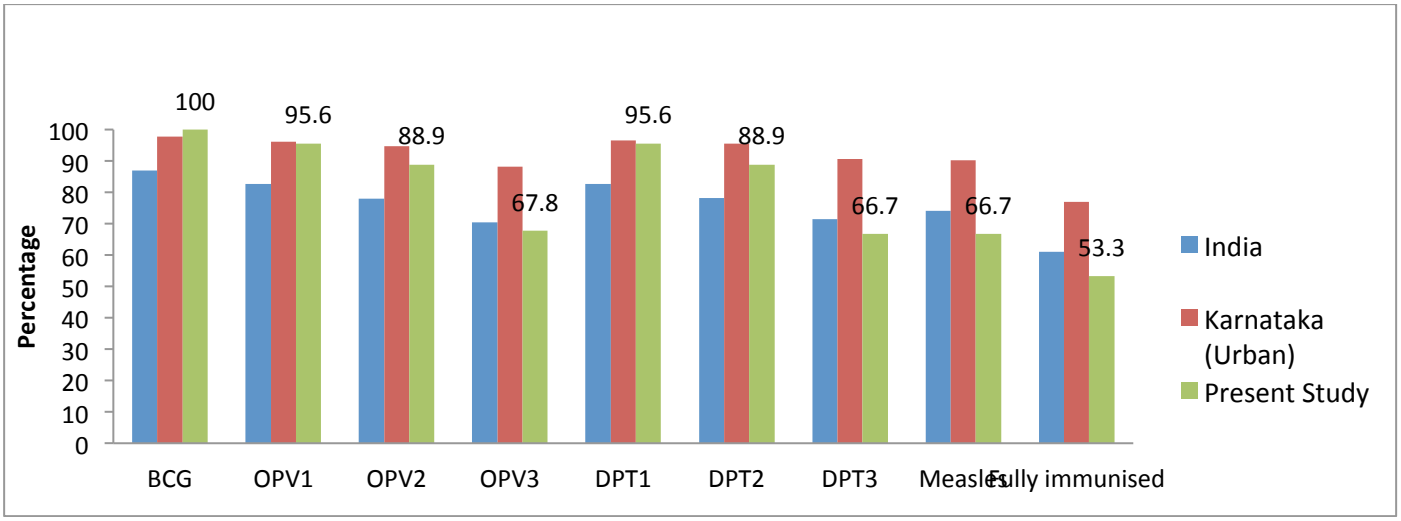

Fig 1: Immunization coverage: Comparison with national and state coverage levels

Numbers within in the graph indicate immunization coverage (%) in the present study.

All the mothers in our study had ever breastfed their children. However, even with such high rates of institutional deliveries, just over half of them had put the baby to the breast within an hour of delivery, though this was still higher than national and state figures (33% and 36% respectively). The practice of giving the child pre-lacteal feeds is highly prevalent in this area, much more than national figure of 11%.[9]. The most common pre-lacteal feed given was sugar water. The proportion of mothers who fed colostrum to the baby was also lower than India and Karnataka levels. This indicates that traditional beliefs and practices still abound and even with increased institutional deliveries, such practices continue. This could also be linked to the fact that this study revealed a lack of counseling regarding breastfeeding during antenatal visits. Even though most mothers had received breastfeeding advice during the postnatal period, less than 40 % exclusively breast-fed their babies for at least 6 months. While this figure is slightly higher than the country-wide figure of 33%, it indicates that that exclusive breast feeding practices need to be further strengthened. Primiparous mothers were less likely initiate breastfeeding within an hour of delivery and also less likely to exclusively breast-feed for 6 months. Timely complementary feeds were introduced at the right age for only half of the children. This was also lesser than all-India figures of 61% timely complementary feeds. Only half the children aged 12 to 23 months were being currently breastfed, which is lower than the country figure of 70%.[9] This indicates that fewer mothers are opting to continue breastfeeding beyond infancy and may be due to lack of awareness or family support, or work outside the home.

For care during common childhood illnesses, it was seen that two-thirds of the children with diarrhea received ORS, higher than the 42% for India[9], however most of the mothers decreased the food and fluid intake for the children during the diarrhoeal episode. This could be due to the local cultural practice of withholding food and fluids during diarrhea. Very few mothers gave the child more fluids than usual. The most commonly offered fluid during diarrhoeal episodes was water. More than 40% of the children had fever or cough or both, probably because of the monsoon season in which the survey was conducted, most of who were also taken to a private practitioner for treatment. This pattern of health–seeking is similar to all-India and Karnataka State figures.[9]

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Looking at the health indicators across the MCH continuum of care (Figure 2) this study has identified some important gaps : mainly lack of IFA consumption (inspite of receiving advice about IFA), high immunisation dropout rates, persistence of erroneous breastfeeding practices like prelacteal feeds, delayed initiation, low rates of exclusive breastfeeding and timely complementary feeds, low rates of continued breastfeeding for children after one year, and lack of Oral Rehydration Therapy and decreased food and fluids during diarrhoea. A study among the urban poor in Indore also revealed similar gaps.[21] In addition, the present study has highlighted the fact that, though women may receive antenatal and postnatal care, the quality of that care is often compromised by omission of essential components of care, especially with regards to examination and counseling.

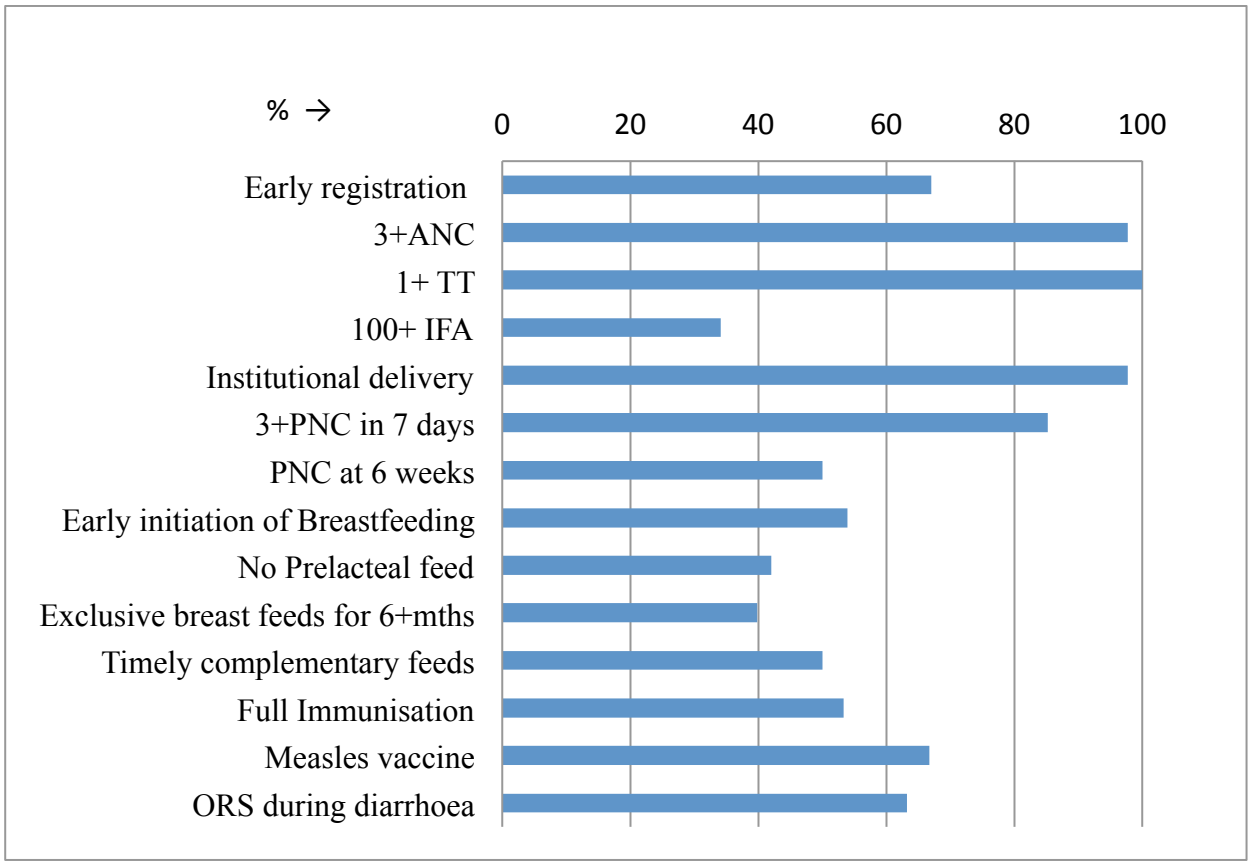

Fig 2: Maternal and child health care coverage across the continuum of care

STRENGTH AND LIMITATIONS

This was a community based, cross-sectional study with a sound sampling methodology. However, many of the key indicators like antenatal care, consumption of iron and folic acid, receiving advice and key components of antenatal and postnatal care and breast feeding practices, were based on the mothers' recall. Also 40 % of the mothers with a child aged 12-23 months did not possess an immunisation card, which may have introduced some errors due to recall, in this study.

CONCLUSION

This study in an urban underprivileged area has generated a multitude of maternal and child care indicators, which when compared and contrasted with national and state level indicators, shows that, even though Karnataka is a high-performing state, there are pockets of poor-performance like urban slums, which are lagging behind in maternal and child health service coverage. This study has identified gaps in the MCH Continuum of Care: lack of IFA consumption, poor quality of antenatal and postnatal care, high immunisation dropout rates, persistence of

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erroneous breastfeeding practices and lack of appropriate treatment during diarrhoea. The authors believe that this study will bring attention at the local and city level to the problem of maternal and child health in urban slums of Bangalore. There is scope for further qualitative research, which will aim to identify potential solutions, in partnership with the Government, to bridging the gaps in the MCH Continuum of Care in urban underprivileged populations.

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