



## Original Research Article

# A CROSS SECTIONAL STUDY ON BREASTFEEDING PRACTICES AMONG POSTNATAL WOMEN IN FIELD PRACTICE AREA OF TERTIARY HEALTH CARE CENTRE, HYDERABAD, TELANGANA

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Received : 10/02/2026  
Received in revised form : 17/03/2026  
Accepted : 04/04/2026

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DOI: 10.70034/ijmedph.2026.2.131

Source of Support: Nil,  
Conflict of Interest: None declared

Int J Med Pub Health  
2026; 16 (2); 760-766

### ABSTRACT

**Background:** Breast feeding is a nature's way of nurturing the child, creating a strong bond between the mother and the child. Breast milk is the first best ideal natural food, easily digested and absorbed by the infant as compared to formula milk. Under normal conditions, Indian mothers secrete 450-600 ml of milk daily with 1.1 gram protein and 70 kcal of energy per 100ml of human milk<sup>1</sup>. Breast milk is used as the 'gold' standard for good infant nutrition at birth. The aim is to study breastfeeding practices among postnatal mothers in urban and rural field practice area of tertiary health care centre, Hyderabad, Telangana. The objective is to study the prevalence of exclusive breastfeeding practice among the study subjects. To study the socio demographic factors influencing breastfeeding practices among study subjects. To compare the breastfeeding practices of study subjects in urban and rural field practice areas.

**Materials and Methods:** A community based cross sectional study was conducted among N=520 postnatal mothers in urban and rural field practice area of Department of Community Medicine, Osmania Medical College. Postnatal mothers of infants, were taken into the study after attaining the consent. Simple random sample technique was followed in selecting the study population. A pretested and semi structured questionnaire was used for collecting data on breastfeeding practices by interviewing mothers of infants. Inclusion criteria is Postnatal mothers of infants aged 0-12 months of both sexes who had given consent for the study. Exclusion criteria – Postnatal mother of infants with congenital birth defects. Infants in whom breastfeeding is contraindicated like galactosemia, psychosis of mother etc. Postnatal mothers who did not give informed consent.

**Results:** In the present study majority 45.5% (237) of the infants belonged to 6-9 months age group among the total study population. In the present study the prevalence of early initiation of breastfeeding within 1 hour after child birth is 45%(117) in urban area and 43.5%(113) in rural areas and 44.2%(230) among total study population. Prevalence of exclusive breast feeding among infants 0 – 12 months age is 71.9% (187 out of 260) in urban areas and 74.23% (193 out of 260) in rural areas.

**Conclusion:** Antenatal care counselling (ANC) during pregnancy in encouraging proper breastfeeding practices among mothers should be strengthened and should be provided as a continuum of care, by appropriately trained health-care professionals and community-based lay and peer breastfeeding counsellors. Counselling should anticipate and address important challenges and contexts for breastfeeding, in addition to establishing skills, competencies and confidence among mothers.

**Keywords:** Exclusive Breast Feeding, Antenatal Mother, Infant.

## INTRODUCTION

**Breastfeeding:** Breast feeding is a nature's way of nurturing the child, creating a strong bond between the mother and the child. Breast milk is the first best ideal natural food, easily digested and absorbed by the infant as compared to formula milk. Under normal conditions, Indian mothers secrete 450-600 ml of milk daily with 1.1 gram protein and 70 kcal of energy per 100ml of human milk<sup>1</sup>. Breast milk is used as the 'gold' standard for good infant nutrition at birth.<sup>[1,2]</sup>

**According to WHO and UNICEF<sup>3</sup>, Optimal breastfeeding consists of**

- Early initiation of breastfeeding within 1 hour of birth;
- Exclusive breastfeeding for the first 6 months of life; and
- Continued breastfeeding for upto 2 years of age.

**Early initiation of breastfeeding:** Early initiation of breastfeeding within 1 hour of birth is crucial for a baby's survival as colostrum, the first milk, is extremely rich in nutrients and antibodies that provides immune protection to an infant. Delayed initiation of breastfeeding is directly linked to the practice of giving babies pre-lacteal feeds, instead of breastmilk. These feeds during the first crucial day is an important factor responsible for the failure of lactation.

**Exclusive breastfeeding:** Exclusive breastfeeding means that an infant receives only breast milk from his or her mother or a wet nurse, or expressed breast milk, and no other liquids or solids, not even water, with the exception of oral rehydration solution, drops or syrups consisting of vitamins, minerals supplements or medicines.<sup>[3]</sup> Infants should be exclusively breastfed for the first six months of life to achieve optimal growth, development and health. Exclusive breastfeeding in the early months of life is correlated strongly with increased infant survival thereby reduces infant mortality due to common childhood illnesses such as diarrhoea or pneumonia, and helps for a quicker recovery during illness<sup>2</sup>. In addition breastfed infants are protected against obesity, have a lowered risk of several chronic conditions like asthma, diabetes, hypertension, high cholesterol levels, heart disease and cancers such as childhood leukaemia later in life compared to artificially-fed infants.<sup>[4-9]</sup> Artificially-fed children have an increased risk of long term diseases like celiac disease,<sup>[10]</sup> ulcerative colitis and Crohn's disease.<sup>[11]</sup>

**Factors Influencing Breastfeeding Practices:** India is currently undergoing rapid urbanisation and negative changes in breastfeeding behaviour are observed during the urbanicity transition. Reduced duration of breastfeeding among more educated and employed mothers are the earliest markers of this change.<sup>[12]</sup> Other sociodemographic factors like religion, mothers age, birth order, socio-economic status also effect breastfeeding practices.<sup>[13-15]</sup> Socio-

cultural factors like social and cultural attitudes of family, Lack of knowledge regarding the benefits of the breast milk, Lack of family support and guidance, insufficiency of breastmilk, affect BF practices.<sup>[16-18]</sup> Factors like Birth order, caesarian section, low birth weight, baby maturity and NICU admission of the baby are associated with failure to initiate early breastfeeding.<sup>[19,20]</sup> Other factors that pushes the breastfeeding percentage down includes lack of designated places for women to feed the child, Insufficient maternity leaves.<sup>[21]</sup> In addition, infant feed formulations available in the market and projected as healthy alternative could also discourage breastfeeding

### Prevalence Of Breastfeeding Practices

**Global:** Globally every year approximately 7.6 million babies are not breastfed. Three in five children (78 million) globally are not breastfed within the first hour of birth. According to WHO it is estimated that only 40% of infants aged 0-6 months are exclusively breastfed worldwide and the rate of continued breastfeeding at 2 years was 45%.<sup>[22]</sup>

**India:** In India though breastfeeding is universal not all mothers are following the exclusive breastfeeding norm even after decades of doctors recommendations and government campaigns for raising awareness. Only 54.9 % children under the age of six months have been exclusively breastfed and exclusive breastfeeding age is on an average for 2.9 months according to NFHS-4 (2015-16)<sup>23</sup>. However, the numbers have improved substantially from a 46.4% in NHFS-3. The prevalence of exclusive breastfeeding in urban areas is less (52.1%) when compared to rural areas (56%).<sup>[23]</sup>

As per UNICEF report only 41.6% of babies are breastfed within an hour of being born, despite 79% of women delivering in a healthcare institution. India ranked 56 out of 76 countries on early initiation of breastfeeding, according to the 2018 Global Breastfeeding Scorecard, released with the report, which tracks progress of breastfeeding policies and programmes.<sup>[24]</sup>

**Telangana:** The overall prevalence of breastfeeding in Telangana is 67% as per NFHS 4 data. Only 66.8% of the rural children below six months were exclusively breastfed, while it is only 68% amongst urban children. Only 37.1% of children aged 6-23months are breastfed within the first hour of birth.<sup>[23]</sup>

**Promotion of Breastfeeding Practices:** India has adopted comprehensive programmes like the IMS Act i.e. the Infant Milk Substitutes, feeding bottles, and infant foods (Regulation of Production, Supply and Distribution) Act 1992, and Amendment Act 2003 and the Baby-friendly Hospital Initiative (BFHI)<sup>26</sup> in 1993 for the protection, promotion and support of breastfeeding practices.<sup>[25]</sup>

The World Health Assembly (WHA) has set a target to increase the global rate of exclusive breastfeeding to at least 50% by 2025. To coincide with the timeline of the Sustainable Development Goals, WHO has

extended the targets for maternal, infant and child nutrition to 2030.<sup>[27]</sup>

The India Newborn Action Plan (INAP) developed by Ministry of Health & Family Welfare in 2014, is targeting a 75% rate of initiation of breastfeeding within an hour of birth by 2017 and a 90% by 2025.<sup>[28]</sup> Under the flagship National Health Mission of the Ministry of Health and Family Welfare in convergence with Ministry of Woman & Child Development, Government of India has launched a national breastfeeding promotion programme as MAA (Mothers' Absolute Affection) in August 2016 for improving breastfeeding practices through mass media and capacity building of health care providers in health facilities as well as in communities.<sup>[29]</sup>

**Aim:** To study breastfeeding practices among postnatal mothers in urban and rural field practice area of tertiary health care centre, Hyderabad, Telangana.

**Objectives:**

- To study the prevalence of exclusive breastfeeding practice among the study subjects.
- To study the socio demographic factors influencing breastfeeding practices among study subjects
- To compare the breastfeeding practices of study subjects in urban and rural field practice areas.

## MATERIALS AND METHODS

A community based cross sectional study was conducted among N=520 postnatal mothers in urban and rural field practice area of Department of Community Medicine, Osmania Medical College, Hyderabad. Sample size was calculated using the formula  $4pq/l^2$  considering the prevalence of exclusive breastfeeding in Telangana state from NFHS 4<sup>23</sup> data as 67.3%, absolute error as 6% with 95% confidence interval with 10% non responsive rate sample size attained was n=260. Therefore a sample size of each area i.e urban n=260 and rural n=260 . Urban field practice area has 14 anganwadi centres serving 652 infant population and Rural field

practice area has 22 anganwadi centres serving 487 infant population. By identifying the anganwadi centres under urban and rural field practice areas, list of information containing Postnatal mothers and their children aged 0-12 months was collected and sample frame was created. From the frame a sample of 260 mothers are selected randomly in urban area and 260 in rural areas by generating the random numbers using MS Excel 2016. The study subjects after satisfying inclusion and exclusion criteria were taken into study. Simple random sample technique was followed in selecting the study population. A pretested and semi structured questionnaire was used for collecting data on breastfeeding practices by interviewing mothers of infants.

**Inclusion Criteria**

- Postnatal mothers of infants aged 0-12 months of both sexes who had given consent for the study

**Exclusion Criteria**

- Postnatal mother of infant with congenital birth defects
- Mothers with Infants in whom breastfeeding is contraindicated like galactosemia, psychosis of mother etc
- Mothers who did not give informed consent

## RESULTS

In the present study majority 45.5%(237) of the infants belonged to 6-9 months age group among the total study population. In urban area 41.9% (109) of infants belonged to 6-9 months age group and in rural area 49.2% (128) infants belong to 6-9 months age group. The mean age and SD of infants in urban area was 7.31±2.43 months and the mean age & SD of infants in rural area was 7.81±2.43 months. In the present study the prevalence of early initiation of breastfeeding within 1 hour after child birth is 45%(117) in urban area and 43.5%(113) in rural areas and 44.2%(230) among total study population. Prevalence of exclusive breast feeding among infants 0 – 12 months age is 71.9% (187 out of 260) in urban areas and 74.23% (193 out of 260) in rural areas.

**Table 1: Showing distribution of study population based on sociodemographic variables.**

Sex of Infant	URBAN		RURAL		Total	Percent (%)
	N	%	N	%		
Male	115	44.2	120	46.2	235	45.2
Female	145	55.8	140	53.8	285	54.8
Total	260	100	260	100	520	100
Religion	Urban		Rural		Total	Percent
	N	%	N	%		
Hindu	124	47.7	176	67.7	300	57.6
Muslim	104	40	65	25	169	32.6
Christian	32	12.3	19	7.3	51	9.8
Total	260	100	260	100	520	100
Type of Family	Urban		Rural		Total	Percent(%)
	N	%	N	%		
Nuclear	95	36.6	148	56.9	243	46.7
Joint	126	48.4	90	34.6	216	41.6
3 generation	39	15	22	8.5	61	11.7
Total	260	100	260	100	520	100
Mother's education	Urban		Rural		Total	Percent(%)
	N	%	N	%		

Illiterate	32	12.3	78	30	110	21.2
Primary school	78	30	96	36.9	174	33.5
Secondary school	99	38.1	60	23.1	159	30.5
Inter/Diploma	29	11.2	21	8.1	50	9.7
Graduate & above	22	8.4	5	1.9	27	5.1
Total	260	100	260	100	520	100
<b>Mother's Occupation</b>	<b>Urban</b>		<b>Rural</b>		<b>Total</b>	<b>Percent(%)</b>
	N	%	N	%		
Home maker	153	58.8	171	65.8	324	62.3
Unskilled	41	15.7	12	4.7	53	10.1
Skilled	35	13.5	44	16.9	79	15.2
Employee	8	3.1	5	1.9	13	2.6
Business	23	8.9	28	10.7	51	9.8
Total	260	100	260	100	520	100

**Table 2 Showing association between factors effecting early initiation of breast feeding practices.**

ANC Counselling	Urban			Rural		
	EIBF	Delayed initiation	Total	EIBF	Delayed initiation	TOTAL
Yes	74	78	152	89	72	161
No	43	65	108	24	75	99
TOTAL	117	143	260	113	147	260
Odds ratio=1.43 (95%CI: 0.87-2.36) Chi square=2.006 P=0.156			OR=3.86 (95%CI: 2.21-6.72) Chi sq=24.032 P<0.0000(significant)			

**Table 3 Association of EBF with various Social factors**

Socio-economic status	Urban			Rural		
	EBF	Non EBF	TOTAL	EBF	Non EBF	TOTAL
I class	4	2	6	2	1	3
II class	34	14	48	23	6	29
III class	78	36	114	95	37	132
IV class	59	16	75	66	19	85
V class	12	5	17	7	4	11
TOTAL	187	73	260	193	67	260
Chi sq=2.507 DF=4 P=0.643			Chi sq=1.998 DF=4 P=0.736			
Type of hospital	Urban			rural		
	EIBF	Delayed initiation	Total	EIBF	Delayed initiation	Total
Govt	87	97	184	91	106	197
Private	30	46	76	22	41	63
Total	117	143	260	113	147	260
Odds ratio=1.37 (95%CI: 0.79-2.36) Chi square=1.32 P=0.249			Odds ratio=1.59 (95%CI: 0.88-2.88) Chi square=2.46 8P=0.116			
Type of Delivery	Urban			Rural		
	EIBF	Delayed initiation	Total	EIBF	Delayed initiation	Total
Normal	93	93	186	92	102	194
LSCS	24	50	74	21	45	66
TOTAL	117	143	260	113	147	260
Odds ratio=2.08 (95%CI: 1.18-3.66) Chi square 6.60 P=0.0101			OR=1.93 (95%CI: 1.07-3.48) Chi sq=4.88 P<0.0271(significant)			
Sex of infant	Urban			Rural		
	EBF	Non EBF	TOTAL	EBF	Non EBF	TOTAL
Male	82	33	115	98	22	120
Female	105	40	145	95	45	140
Total	187	73	260	193	67	260
Odds ratio=0.94 (95%CI: 0.54-1.63) Chi square 0.039 P=0.843			OR=2.11 (95%CI: 1.17-3.77) Chi sq=6.441 P<0.0111(significant)			
Mother's education	Urban			Rural		
	EBF	Non EBF	TOTAL	EBF	Non EBF	TOTAL
Illiterate	21	11	32	52	26	78
Primary school	50	28	78	78	18	96
Secondary school	75	24	99	44	16	60
Inter/Diploma	24	5	29	15	6	21
Graduate & above	17	5	22	4	1	5
Total	187	73	260	193	67	260
Chi sq=5.71 DF=4 P=0.221			Chi sq=5.004 DF=4 P=0.286			
Mother's Occupation	Urban			Rural		
	EBF	Non EBF	TOTAL	EBF	Non EBF	TOTAL
Home maker	125	28	153	143	28	171

Unskilled	23	18	41	8	4	12		
Skilled	20	15	35	28	16	44		
Employee	5	3	8	2	3	5		
Business	14	9	23	12	16	28		
Total	187	73	260	193	67	260		
	Chi sq=17.86 DF=4 P=0.0013			Chi sq=28.3 DF=4 P=0.000				

**Table 4: Association of EBF Anganwadi services utilisation**

Anganwadi services utilisation	Urban			Rural		
	EBF	Non EBF	TOTAL	EBF	Non EBF	TOTAL
Regular	155	49	204	171	46	217
Irregular	32	24	56	22	21	43
Total	187	73	260	193	67	260
	OR=2.37 (95%CI:1.27-4.4) Chi sq=7.721 P=0.0054(significant)			OR=3.54 (95%CI:1.79-7.01) Chi sq=14.33 P=0.0001(significant)		

Regular Utilization of Anganwadi services on exclusive breastfeeding practices both in urban and rural areas had a significant association with Chi sq=7.721 , P=0.0054(significant), Chi sq=14.3, P=0.0001(significant)

**Table 5: Distribution of Infants based on breastfeeding during illness**

BF during illness	Urban			Rural		
	EBF	Non EBF	TOTAL	EBF	Non EBF	TOTAL
Yes	169	32	201	175	40	215
No	18	41	59	18	27	45
TOTAL	187	73	260	193	67	260
	OR=12.02 (95%CI:6.15 - 23.52) Chi sq=64.82 P<0.0000			OR=6.56 (95%CI:3.29-13.06) Chi sq=33.33 P<0.0000		

The difference in prevalence of exclusive breastfeeding rates based on Feeding during illness is statistically significant in urban area (P<0.0000) similarly the difference in prevalence of EBF rates is significant in rural areas (P<0.0000).

**Table 6: Association of EIBF with birth order of infant**

Birth order of infant	Urban			Rural		
	EIBF	Delayed initiation	Total	EIBF	Delayed initiation	Total
1	45	58	103	34	49	83
2 & above	72	85	157	79	98	177
TOTAL	117	143	260	113	147	260
	OR=0.91(95%CI: 0.55–1.51) Chi sq=0.118 P=0.7307			OR=0.86 (95%CI:0.50–1.46) Chi sq= 0.309 P=0.577		

The prevalence of early initiation of breastfeeding in association with birth order of infant is not statistically significant in both urban and rural areas (P>0.05).

## DISCUSSION

Early initiation of breastfeeding and exclusive breastfeeding of infants below six months are considered as the best indicators for assessing breastfeeding practices. Though breastfeeding is universal practice in India, still suboptimal breastfeeding practices are prevailing most commonly in many areas of country. This comparative cross sectional study was done to estimate the prevalence of the early initiation of breast feeding and exclusive breastfeeding and factors associated with them in field practice areas of Osmania Medical College, Hyderabad.

The prevalence of EBF is more in rural areas 74.23%(193) when compared to urban areas 71.9%(187). Similarly in Swetha R et al,<sup>[30]</sup> (2014) study 62.33% of babies had received exclusive breast feeding for 6 months and there was no difference among children in both the areas. The observed difference between both the areas can be due to negative impact of urbanisation, increased women employment of mothers residing in urban area.

In the present study the prevalence of early initiation of breastfeeding within 1 hour after child birth is 45%(117) in urban area and 43.5%(113) in rural areas and 44.2%(230) among total study population. The prevalence of EIBF in the present study is higher than the district rate of 39.7%, the state prevalence 37.1% as well as the national prevalence of 41.6%, as reported by NFHS-423.

In the present study ANC counselling of mothers during pregnancy was associated with early initiation of breastfeeding in the Rural area. In Sharma A et al (2016) study,<sup>[31]</sup> it was found that mother who were counselled during antenatal visits about need of breast feeding were more likely to breastfeed their babies within one hour(P=0.002). Another study by Patel A et al,<sup>[32]</sup> (2013)32 has shown that counselling on breastfeeding during antenatal visits (adjusted OR 3.60, 95% CI 2.00- 6.20) were associated with timely initiation of breast feeding. The finding underscores the role of ANC in encouraging proper breastfeeding among attendants through providing correct information, correcting misconceptions, and encouraging the use of strategies that increase the probability of successful breastfeeding.

In the present study the prevalence of exclusive breastfeeding is significantly associated with gender of the infant in rural area. These findings are consistent with the other study by Bhanderi DJ et al,<sup>[33]</sup> (2019) study reported significant association of gender with exclusive breastfeeding (P=0.0001) higher EBF rate in female infants than in male ones. In contrast Dipen V patel et al,<sup>[34]</sup> (2015) study did not find any association between Exclusive breast feeding and gender of infant (P=0.083). In the study by Ogbo F et al (2019),<sup>[35]</sup> children were less likely to be exclusively breastfed if they were female and were perceived to be born large compared to being male and those perceived to be small. Gender-related variations in EBF rates may be due to cultural differences in the studied populations.

In the present study the prevalence of exclusive breastfeeding is significantly associated with occupation of the mother. Similar significant association was observed in Bhanderi DJ et al (2019),<sup>[33]</sup> study which demonstrated lower EBF rates in working mothers compared with nonworking ones (P<0.0000). In contrast Dipen V patel et al (2015)<sup>34</sup> study did not find any association between Exclusive breast feeding and mothers occupation despite housewives supposedly having more time available to feed their infants. In Swetha R et al (2014),<sup>[30]</sup> study significantly higher number of employed mothers did not practice exclusive breast feeding in slum (p=0.03086) and non-slum area (p=0.0000068). In Polineni V et al (2016),<sup>[36]</sup> study it was found that the percentage of non Working women (46.7) who followed exclusive breast feeding was higher than that of working women (15.9) (p<0.001). In Shubha DB et al (2016),<sup>[37]</sup> in her study observed that 16% of the working and 62% of the non-working women had exclusively breastfed their children. Women's work may have a negative impact on breastfeeding because of inadequate time to breastfeed. Such finding emphasizes the need for leave assistance to mothers that allows them resume work after 6 months of childbirth.

In the present study the prevalence of exclusive breastfeeding is significantly not associated with religion of the infant. But in contrast significant association (P=0.023) was observed in study by Bhanderi DJ et al (2019) in Gujarat.<sup>[33]</sup>

Exclusive breastfeeding is significantly associated with type of family of the infant in urban area. In other study by Radhakrishnan S et al (2012),<sup>[38]</sup> found a significant association between the type of family and Exclusive breast feeding with P=0.0001. In study by Polineni V et al (2016),<sup>[36]</sup> did not find any type of family being associated with EBF.

The prevalence of exclusive breastfeeding is not significantly associated with socio-economic class of the infant. In study by Anupama D et al (2016),<sup>[39]</sup> the prevalence of Exclusive breast feeding was found to be significantly higher among low socio-economic status (57.9%, p=0.00).

In the present study no significant association was observed between early initiation of breastfeeding

and birth order of infant. This is in contrast to study by Sandor M et al (2013),<sup>[40]</sup> which showed women with only one child were most likely to initiate breastfeeding within one hour (OR =1.24, CI = 1.12 - 1.36) as well as within 24 hours (OR =1.38, CI = 1.24 - 1.52) compared to women with four children or more (P=0.0000).

## CONCLUSION

The difference in prevalence of exclusive breastfeeding between urban and rural areas is not statistically significant (P>0.05)

The prevalence of exclusive breastfeeding was associated with age of infant, mother's occupation, type of family, anganwadi services utilisation, pacifier use and BF during illness in urban area

The prevalence of exclusive breastfeeding was associated with age of infant, sex, mother's occupation, anganwadi services utilisation, pacifier use and BF during illness in rural area

The prevalence of exclusive breastfeeding was not associated with mother's age, mother's education, religion, type of family, socio-economic class, advisor for EBF, in rural area.

## Recommendation

1. ANC counselling during pregnancy in encouraging proper breastfeeding practices among mothers should be strengthened and should be provided as a continuum of care, by appropriately trained health-care professionals and community-based lay and peer breastfeeding counsellors. Counselling should anticipate and address important challenges and contexts for breastfeeding, in addition to establishing skills, competencies and confidence among mothers.
2. Ensuring full implementation of Baby-friendly Hospital Initiative centres for provision of support for breastfeeding, as well as strengthening monitoring and evaluation systems of the successful initiation and establishment of breastfeeding. Expanding the Initiative to include clinics, health centres and paediatric hospitals.
3. Education programmes on breast feeding should be taken up in all antenatal, postnatal and immunisation clinics. Awareness regarding correct breastfeeding practices like early initiation of breast feeding within 1hr after birth, avoidance of pre-lacteals, EBF for first 6 months and knowledge about adequacy of breast milk to lactating mothers has to be reinforced during each visit to health centre or during the house visit by health workers.

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