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INFANT REARING PRACTICES IN SLUMS OF AMRITSAR CITY- A CROSS-SECTIONAL STUDY

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ABSTRACT

Background: Rearing practices are a major determinant of morbidity and mortality status of infants. Children living in slums are deprived of basic necessities. Unhygienic environment and deficient nutrition hinder their growth and make them more prone to infectious diseases. The aim is to find out infant rearing practices in slums of Amritsar city & to access health profile of infant in slums of Amritsar city

Materials and Methods: A descriptive cross-sectional study in urban slums of district Amritsar. In total, 400 households each from four slums (1600 in total) were randomly selected. One to one interview with mother of each infant was conducted and information was recorded on pretested performa.

Results: 56% of infants was delivered in home and 43% was delivered in hospital. Pre-lacteal feed was given in 60% of neonates. Colostrum was given only in 51% of neonates. Further 7% of mothers started breast feeding in the first hour after delivery and 48% of mothers gives exclusive breast feeding to infant and only 16% of mother feeds the child for 3-6 months. On assessing immunization status of infant, it was found that 43% of infants was fully immunized. Regarding nutritional status, 46% of infants were stunted, 44% were underweight, 35% were wasted and stunted and 8% were wasted. On assessing disease history of infants, it was found that 63% of infants suffer from any disease two-month preceding the survey. It was found that trends of home delivery is more in illiterate mothers 67% as compared to the literate mothers 32%. Underweight, stunting and wasting was more in Infants of illiterate mother. Similarly, the trends of fully immunized infants were more in literate mother 58% than illiterate mother 38%.

Conclusion: Better living conditions, improvement in income of poor, quality schooling, proper health services, equitable distribution of resources is must for holistic growth of society and to counter with the problems of slums.

Keywords: Rearing practices, Infant, urban slums, health profile.

INTRODUCTION

Child rearing is multi-dimensional task, encompassing the physical, emotional, and psychological care of children. Child rearing practices vary across communities, depending on social customs, traditional beliefs and prejudices of the community, literacy and socioeconomic status of the family, education status of family especially of the mother. Rearing practices are a major determinant of morbidity and mortality status of infants. In true sense, rearing start from womb, as social environment around mother and mothers' health directly affect health of foetus (IUGR) and child (LBW). After birth, common rearing practices include pre-lacteal feed, breastfeeding, complementary feeding, weaning, vaccination, treatment of ailments etc. various culture practices, customs, beliefs, socio-economic status, education status of family and living conditions determine the rearing practices. Living conditions have direct impact on public health. Infants are the most

vulnerable age group due to immature immune system. In slums the living conditions are miserable and high mortality and morbidity is seen in these conditions. Surveys on health and living conditions in eight Indian cities observed differences in infant and child mortality rates between slum and non-slum settings for five out of eight cities.[1] The infant mortality rate was almost 18 points higher and the child mortality rate was almost 32 points higher in slum settings. Infant mortality rate (IMR) is still very high in our country. Recent data by GOI Sample Registration System (SRS)-2020 suggests IMR is 29/1000 live births.[2]

Census of India 2011 defines slum as a compact area of at least 300 populations or about 60-70 households of poorly built congested tenements, in unhygienic environment usually with inadequate infrastructure and lacking in proper sanitary and drinking water facilities.[3] Though the level of urbanization has increased marginally, i.e., from 27.81% in 2001 to 31.16% in 2011, but urban slums have grown at a larger pace.[] Even though Punjab being a farming-dominated area, urban population is on a rise, where 37.49% of population resides in urban areas, which is above the national figure that is 31.16%. Amritsar accommodates about 40% of population in urban slums, which is second in rank after Ludhiana.

The most affected being those residing in urban slums, where 27% of infants born in slums have low birth weight.[5] Half of the children in slum areas are underweight and 19% are severely underweight. Four out of every 10 children are found to be stunted, which is higher than that in non-slum areas.[6] Among under-5 children residing in urban slums, nearly 60% reportedly suffered from at least one episode of Acute Respiratory Infections (ARI) and 24.8% had at least one episode of diarrhoea in last 3 months.[7]

India is ranked at 79 out of 100 countries in parameters like early initiation of breastfeeding, Exclusive Breast Feeding (EBF) for the first six months, complementary feeding and bottle-feeding rates. The concerning factor is that EBF rate for the first 6 months has remained stagnant at 55% since 1998 in India while bottle feeding has gone up from 13.4% in 1998 to 17% in 2018. Inadequate breastfeeding results in one lakh preventable child deaths (mainly due to diarrhoea and pneumonia), 3.47 crores cases of diarrhoea, 0.24 crores cases of pneumonia, and 40,382cases of obesity in India.[8] Nearly 90% of women give birth in the health facilities (both public and private), as per the NFHS 5(2019-21), but only 41.8% women initiate breastfeeding within the first hour of birth. It is encouraging to see that 63.7% children are exclusively breastfed during 0-6months, which has shown a rise. But only 45.9% babies start semi solid foods between 6-8 months along with continued breastfeeding.[9]

However, only isolated data is available on slums in Punjab. So, this study was planned to assess infant rearing practices in slums of Amritsar city.

Aims & Objectives

- To find out infant rearing practices in slums of Amritsar city.
- To access health profile of infant in slums of Amritsar city

MATERIALS AND METHODS

Community based cross-sectional study was conducted in urban slums of district Amritsar (Punjab) after obtaining scientific and ethical approvals from the institutional committees. Amritsar city has 63 registered slum areas according to Municipal corporation Amritsar and Master plan of Amritsar PUDA 2010-203110. From 63 areas, 4 areas were selected for study by a random lottery method. In these 4 selected areas, all houses were enlisted and then from each area 400 houses were selected for study by simple random sampling. So, in total 1600 houses were surveyed in four areas.

Assuming the power of study to be 80%, the sample size for each selected slum was calculated by using the formula for single proportional, i.e.,

$n = (Z^2 \times p \times q) / d^2$

where p = expected prevalence/proportion of interest (taken to be 50% to get the maximum sample size),

d = precision assumed to be 5%

Z = 1.96 (for level of confidence of 95%).

Therefore, a total of 400 households were selected from each slum (total sample size = 1600).

A household survey was conducted among the selected households and all children aged 0–1 year were included in the study after taking written informed consent of mother/

guardian. During the visit, mother/guardian of the child was interviewed and information

was recorded on semi structured and pretested Performa which has two parts. First part of Performa includes information of socio-demographic profile of family and 2nd part of Performa include information about infant rearing practices like place of delivery, breastfeeding, weaning, immunization, ICDS services, disease status in last 2 months, place of treatment etc. Household without having any children of age 0-1 year then 1st part of Performa was filled and houses having children under one year of age both part 1 and part 2 of Performa was filled, so in total 1600 houses was surveyed in study.

Further along with this length in cm; weights in kg of under-1 children were measured using standardized technique and recorded on the same Performa. Length was recorded by using an ISI marked Infanto-metre. Weight was recorded by an ISI marked infant weighing scale calibrated up to 0.1 kg for the children aged between 0 and 12 months. These measurements were used to assess the nutritional status of the child, where weight for age, height for age and weight for height indices were calculated. WHO criteria based on standard deviation (SD) units was considered for undernourishment. Any of above indices more than 2

SD below the reference median line were labelled as underweight, stunted and wasted.

For assessing the vaccination coverage schedule according to National immunization schedule was considered. Child was considered fully immunized if he/she had received 1dose of BCG, 3 doses of OPV/DPT/Hepatitis -B vaccines and one dose of measles vaccine before 1 year of age, child who had missed any one or more doses of recommended vaccines or if received all vaccines, the interval between the 2 doses being more than 4 weeks was taken as partially immunized and child given the grace period of 2 immunization sessions, 2 months for BCG, 2 months for DPT/OPV/Hepatitis-B and 1 month for Measles vaccine. An Infant who was not given the due vaccine/ dose even after the grace period was taken as unimmunized11.

The data was compiled and analysed using Epi Info 07 (CDC, USA). Proportions were calculated where relevant and Chi-square test was applied.

RESULTS

Table 1: Association between breastfeeding and episodes of diarrhoea

Breastfeeding	H/o Diarrhea 2 months preceding survey	No H/o Diarrhea 2 months preceding survey
Exclusive (n=113)	63 (56%)	50 (44%)
Complementary (n=123)	86 (70%)	37 (30%)

p-value is 0.0242. significant at $p < 0.05$

Table 2: Distribution of children according to immunization status from age 0-1 year

Immunization Status (0-1 yrs)	Frequency
Unimmunized	35 (15%)
Partially immunized	99 (42%)
Fully immunized	102 (43%)
Total	236

Table 3: Distribution of children based on the nutritional status of age group 0-1 year

Nutritional status	Present	Absent
Wasting	20 (8%)	216 (92%)
Stunting	109 (46%)	127 (54%)
Wasting and stunting	83(35%)	153(65%)
Underweight	103 (44%)	133 (56%)

n=236

Table 4: Distribution of children those suffered from disease in the last 2 months preceding the survey of age group 0-1year

H/0 Suffered from any disease 2 months preceding survey	Frequency
Yes	149(63%)
No	87(37%)
H/0 Suffered from Diarrhoea 2 months preceding survey	
Yes	96(41%)
No	140(59%)
H/0 Suffered from ARI 2 months preceding survey	
Yes	98(41%)
No	138(59%)

n=236

Table 5: Univariate analysis of various factors with literacy of mother

Place of Delivery Home Hospital	Illiterate Mother 114(67%) 56(33%)	Literate Mother 21(32%) 45(68%)	Odd's ratio 4.3	Chi square 24	p-value 0.0000091
Underweight Yes No	 77(45%) 93(55%)	 28(42%) 38(58%)	1.1	0.15	0.69
Stunting & Wasting Present Absent	 65(38%) 105(62%)	 20(30%) 46(70%)	1.4	1.2	0.25
Immunization Unimmunized Partially Immunized Fully Immunized	 26(16%) 77(47%) 62(37%)	 7(11%) 20(31%) 37(58%)		7.6	0.0263

DISCUSSION

Total 1600 houses were surveyed in study. In those 1600 houses, 236 infants were part of study. Among them 108 were male and 128 were females. 56% of infants were delivered in home and 43% were delivered in hospital. Saira M et al in their study on urban slums in Aligarh city found that 76.5% mothers had delivered their babies at home with the help of

untrained dais or relatives.[12] In present study 56% deliveries were conducted in home which may be due to lack of government health services in slums like urban PHC and urban CHC etc.

After delivery pre-lacteal feed was given in 60% of neonates. Colostrum was given only in 51% of neonates, further the 7% of mother start breast feeding in the first hour after delivery and 48% of mothers gives exclusive breast feeding to infant and only 16% of mother feeds the child for 3-6 months which is quite low than the national average according to NFHS-5 i.e. 41.8% of mother start breast feeding within one hour.[9] About 50% of females start weaning at appropriate time i.e. six months which is quite similar to the National Family Health Survey-5 data that 52% of children at the age of 6-8 months receive semi-solid food.[9] According to Health and living condition in eight cities, less than half of children under six months of age are exclusively breastfed. Exclusive breastfeeding drops to only 28 percent for children age 4-5 months.[13] Saira M et al in their study found that 23.8% had introduced semisolids at the correct age of six months, but in inadequate quantity; top milk was diluted with water.[12] Delay in weaning may be due to lack of knowledge as 80% of mothers were illiterate and also there was poor coverage of awareness services provided by Anganwadi centres. On analyzing effect of exclusive breastfeeding and complementary breast feeding, it was seen in our study that history of diarrhea 2-month preceding survey was more infants who get complementary breastfeed than exclusive breastfeed 70% versus 56% which was statistically significant. On assessing immunization status of infant, it was found that 43% of infants was fully immunized, which was quite low than the national average i.e. 83% of children were fully immunized according to National family Health survey-59. Shrivastava DK et al in their study of urban slums of Etawah found that 33.94 children were fully immunized, 50.94 were partially immunized and 14.96% had received no vaccine.[14]

Less institutional delivery, high prevalence of pre-lacteal feed, less exclusive breastfeeding, inappropriate weaning time, less immunization coverage was seen in our study which may due to the faulty cultural practices, less education of the family members especially mothers as most of the mothers are educated up to primary, less accessibility and availability of the health services in slums. Regarding nutritional status 46% of infants were stunted, 44% were underweight, 35% were wasted and stunted and 8% were wasted. Among them malnourishment was more in females than males 51% vs35% and it was statistically significant. In the study conducted in Child Health Scenario in the slums of Meerut, Uttar Pradesh wasting was present in 12.4%, stunting in 68.2%, underweight in 43.0%.[15]

In present study, stunting and underweight was more than national and state data as the national and state data represent the whole population, while present study was conducted among children in slums. One of reasons behind this that intergenerational cycle may be responsible for malnutrition in infants as in our study malnutrition is more in female child so may be mothers were also under nourished and there is high chance that under nourished female give birth to birth to the undernourished child, According to NFHS-5 (15-49y) 52 % pregnant female were anemic and 18.7 % of females have BMI < 18.59.

Further on studying Anganwadi services availing by infant form AWC it was found that 24% of infants availing services. It was found in our study that Anganwadi centers was less in number and not according to the norms in slums and also there is inappropriate services of nutrition, immunization, health checkup etc. It was observed during study that one pregnant lady get one Kg bag of panjiri for full pregnancy. So, accessibility was the one concern, other is continuous availability of services according to the norms.

On assessing disease history of infants, it was found that 63% of infants suffer from any disease two-month preceding survey, two common diseases of childhood i.e. diarrhea and ARI, it was seen in 41% of infants two months preceding survey. Panda P et al in their study in Ludhiana slums found that diarrhoeal diseases (61.6%) were found to be the major cause of morbidity in the children. This was higher even than that in a slum in Calcutta, the so-called home of diarrhoeal diseases, where respiratory infections were responsible for 25.1% of the disease episodes followed by diarrhoeal diseases (23.1%).[16] Diarrhoea may be due to poor sanitation as garbage and water collection was present around 95% of houses and also 62.68% households had mud floor in their houses. Further on taking treatment history it was found that 95% of household take treatment from the RMP or quacks, 25% from the faith healers and only 16% of households go to the qualified doctors in private and public sector. Babu et al in Primary health care services among a migrant found that accessibility and utilization of the healthcare services among a migrant community inhabiting slums of an eastern Indian city Bhubneshwar was very poor. They had to travel and spend a lot of time as there was no Government hospital or clinic in the vicinity and about 73% of the households visited private practioner including unqualified practioners available in their town.[17]

Univariate analysis was done to determine the various factors associated with education status of mother. It was found that trends of home delivery is more in illiterate mother 67% as compared to the literate model 32%, underweight, stunting wasting was more in Infants having illiterate mother. Similarly, the trends of fully immunized infant were more in literate mother 58% than illiterate mother 38% and it was statistically significant.

CONCLUSION

Infant rearing practices like less institutional delivery, high prevalence of pre-lacteal feed, less exclusive breastfeeding, inappropriate weaning time, less immunization coverage, malnourishment, irrational treatment of diseases etc. was seen in our study which may due to the faulty cultural practices, low socio-economic status, less education of the family members especially mothers as most of the mothers are educated up to primary, less accessibility and availability of the health services in slums. As cultural practices are deeply rooted in day-to-day practices so continuous education on correct rearing practices at grass hood level is required though primary health care approach though subcenters, health & wellness centers, subsidiary health centers, urban PHC and urban CHC, Anganwadi centers etc. In long term better living conditions, improvement in income of poor, quality schooling, proper health services, equitable distribution of resources is must for holistic growth of society and to counter with the problems of slums.

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