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Original Research Article

Utilization pattern of child health care services in the rural area of Surendranagar district: a community based cross sectional study

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ABSTRACT

Background: Infant and child mortality continues to be a major public health problem all over the country. Despite the existence of national programmes for improving child health in India, child mortality and morbidity continue to be high. Utilization of child health care services is poor in the rural areas, causing significant impact on the health causing increased morbidity and mortality.
Methods: It was a Community based Cross-sectional study carried out in the rural area of Surendranagar district through oral questionnaire method which was pre-designed and pretested. Data on demography, history of colostrum, initiation of breastfeeding, prelacteal feeds, exclusive breastfeeding, introduction of complementary feeding, immunization, respiratory infections etc. were collected, compiled and analyzed by applying appropriate tests using SPSS.
Results: Out of 154 participants, 43.51% were offered breastfeeding within one hour of birth. Association was observed between initiation of breastfeeding, exclusive breastfeeding, time of introduction of complementary foods and duration of breastfeeding and utilization of health education services. Educational level of mothers and immunization status of the children had a significant statistical association. The overall prevalence of ARI was 31.82% & of Diarrhoea was 39.61%.
Conclusions: A positive association was observed between nutritional status and utilization of nutritional services. Significant impact of health education services given during the antenatal period was observed on initiation of breastfeeding as well as exclusive breastfeeding. Although child services in India have been created, strengthened and expanded over the years, their performance in terms of utilization particularly in rural area is still limited.

Keywords: Child health care services, Rural area, Utilization pattern

INTRODUCTION

Infant and child mortality continues to be a major public health problem all over the country. The increasing coverage of new born, and child health care services is intrinsically associated with the expected improvements in the child health. Studies.[1,2] have shown that the increasing coverage gap in maternal, newborn, and child health care services has considerable influence in under-five mortality in India. The Millennium Development Goal (MDG 4) aimed to reduce child mortality by two-thirds between 1990 and 2015.[3,4] Acute Respiratory Infections (ARI) and Acute Diarrheal Diseases (ADD) are the most common acute childhood illness and are major contributors to child mortality.[5-7] The World Health Organization (WHO) estimates that seeking prompt and appropriate care during episodes of ARI and ADD could reduce child deaths by nearly 30%.[8] Therefore, Integrated Management of Neonatal and Childhood Illness (IMNCI) emphasizes about improvement of families' care seeking behaviour in addition to improving providers' skills in managing

childhood illnesses. Socio - economic inequities may also affect access to and utilization of available health care services time taken in seeking of medical care as well as selection of appropriate health care provider for acute childhood illnesses.[9-13]

Studies from various countries suggest that health care seeking is inappropriate and health services are often under-utilized during childhood illnesses.[14] Mothers' perceptions about symptoms and their severity, mothers' beliefs about childhood illnesses, and mothers' ability to recognize the danger signs are some important factors determining health care-seeking behaviour or utilization of health care services.[15-17]

During the past two decades, social scientists and epidemiologists have emphasized that studies about health care seeking behaviour and utilization of health services will provide good understanding about factors which may have programmatic and policy implications. Therefore, such studies provide important information to the policy makers for designing strategies aimed to improve health care delivery.

For effective implementation of the national health programs, proper understanding of the demographic as well as socio cultural factors affecting the utilization of child health care services is very essential. Program efforts can be concentrated to increase the acceptance/utilization rates, if these factors are correctly identified. Therefore, the present study was carried out in the rural area with the following objectives

- To study the utilization of child health services with respect to immunization, acute respiratory tract infections (ARTI) and acute diarrheal diseases in under five children,
- To find out the association of these factors with socio-demographic variables,
- To assess awareness regarding government health services focusing on child health among parents,
- To assess the health seeking behaviour of parents of under five children regarding acute respiratory tract infection (ARTI) and diarrhea,
- To find out reasons for non-utilization of child health services.

METHODS

Sayla, a rural area of Surendranagar district was selected to carry out Community based Cross- Sectional study on Utilization of Child Health Services. Ethical clearance was obtained prior to initiation of the study. Total population of Sayla is 16,169. There are 7799 females and 8370 males.[18] As per SRS-2012, percentage of population in the age group 0-4 years to total population in Gujarat (Rural area) is 9.5% which amounted to 1536 children of under-five age group.[19]

It was decided to study 10% of the total under five children in Sayla as per the study protocols, so sample size would be 154 children of under-five age-group. Various parameters like demographical variables, history of colostrum, timing of initiation of breastfeeding, prelacteal feeds, exclusive breastfeeding, introduction of complementary feeding, immunization, respiratory infections were taken into consideration to assess the utilization pattern of Child Health Services. Areas which covered under the field practice area of Rural Health Training Centre, Sayla were included in the study for recruitment of the participants.

Each and every house in those areas was surveyed using pre- designed and pre-tested questionnaire. Children under five years of age were included in the study whereas mothers of children not giving consent, non-co-operative mothers were excluded from the study. Collected data was compiled and analyzed using SPSS-24. Appropriate tests were applied to found out association between child health care services and categorical variables.

RESULTS

A total of 154 children were surveyed during the study period. one fourth of the total children i.e. 38 (24.68%) were of 3-4 years of age followed by 1-2 years (22.08%), 4-5 years (21.43%), 2-3 years (17.53%) and the lowest i.e. 14.28% belonged to the age group of 0-1 year (Table 1).

Table 1: Age and gender wise distribution of under five children (n=154).

Age group	Male Number (%)	Female Number (%)	Total (%)
Age group			
≤ 1 year	13 (59.09)	9 (40.91)	22 (14.28)
1-2 year	21 (61.76)	13 (38.24)	34 (22.08)
2-3 year	11 (40.74)	16 (59.26)	27 (17.53)
3-4 year	18 (47.37)	20 (52.63)	38 (24.68)
4-5 year	26 (78.79)	7 (21.21)	33 (21.43)
Total	89 (57.79)	65 (42.21)	154 (100.0)

The practices of breast feeding and weaning prevailing in the community play a crucial role in deciding the health of a child because of various reasons. This study gave us an ample opportunity to know about these practices prevailing in the area. Of the 154 respondents, 67 (43.51%) were offered breastfeeding within one hour of birth and among this more than 70% of mothers had availed advice regarding proper timing to start breastfeeding. There was considerable delay in initiating breastfeeding in about 56.49% of the respondents. Pre-lacteal feeds were given to almost 48% of the babies and around 46% of the mothers discarded their colostrum.

It was unfortunate to note that exclusive breastfeeding rate was only 53.90%. Around 7% of participants were put on complementary foods at ≤ 4 months; 25.32% between 4-6 months and around 63% at ≥ 6 months of age. Analysis of the data related to duration of breastfeeding revealed that about 38% of the respondents were breastfed for <6 months, about 43% for 6-12 months and only around 19% respondent received breastfeeding for ≥ 12 months.

Table 2: Impact of health education services availed from health care personnel on breastfeeding practices (n=154).

Feeding history	Health education services		Statistical Values
	Availed (%)	Not availed (%)	
Colostrum			
Given	57 (67.86)	27 (32.14)	
Not given	41 (58.57)	29 (41.43)	x^2 = 1.423
Total	98 (63.64)	56 (36.36)	P > 0.05
Initiation of breast feeding			
Immediate or ≤ 1 hr	48 (71.64)	19 (28.36)	
> 1 hr to 1st day	37 (63.79)	21 (36.21)	x^2 = 6.29
2nd day or more	13 (44.83)	16 (55.17)	P < 0.05
Total	98 (63.64)	56 (36.36)	
Prelacteal feed			
Given	42 (57.53)	31 (42.47)	
Not given	56 (69.14)	25 (30.86)	x^2 = 3.461
Total	98 (63.64)	56 (36.36)	P > 0.05
Exclusive breastfeeding			
Yes	61 (73.49)	22 (26,51)	
No	38 (52.78)	34 (47.22)	x^2 = 7.56
Total	98 (63.64)	56 (36.36)	P < 0.05
Introduction of complementary food			
< 4 months	04 (40.00%)	06 (60.00%)	
4 – 6 months	18 (46.15%)	21 (53.85%)	
At 6 months	49 (74.24%)	17 (25.76%)	x^2 = 11.498
> 6 months	22 (70.97%)	09 (29.03%)	P < 0.05
Not started yet	05 (62.50%)	03 (37.50%)	
Total	98 (63.64%)	56 (36.36%)	
Duration of breast feeding (n=132*)			
< 6 months	21 (42.00%)	29 (58.00%)	
6 – 12 months	39 (68.42%)	18 (31.58%)	x^2 = 8.133
≥ 12 months	16 (64.00%)	09 (36.00%)	P < 0.05
Total	76 (57.58%)	56 (42.42%)	132

Table 3: Distribution of children according to utilization of immunization services (n=154).

Variable	Male Number (%)	Female Number (%)	Total Number (%)
Immunization card			
Availed	57 (59.37)	39 (40.63)	96 (62.34)
Not availed	32 (55.17)	26 (44.83)	58 (37.66)
Immunization status			
Fully immunized	51 (58.62)	36 (41.38)	87 (56.49)
Partially immunized	34 (61.82)	21 (38.18)	55 (35.72)
Not immunized	4 (33.33)	8 (66.67)	12 (7.79)
Vitamin a prophylaxis			
Availed	51 (61.45)	32 (38.55)	83 (53.90)
Not availed	38 (53.53)	33 (46.48)	71 (46.10)
Total	89 (57.79)	65 (42.21)	154 (100.0)

A positive association was found between initiation of breastfeeding, exclusive breastfeeding, time of introduction of complementary foods and duration of breastfeeding and utilization of health education services (Table 2).

Table 4: Reasons for failure of immunization amongst children (n=67).

Reasons	Male NUMBER (%)	Female Number (%)	Total Number (%)
Lack of information	24 (57.14)	18 (42.86)	42 (62.69)
Fear of side effects	02 (33.33)	04 (66.67)	06 (8.96)
Family member's refusal	03 (75.00)	01 (25.00)	04 (5.97)
Health facility far	00 (00.00)	01 (100.0)	01 (1.49)
Time of immunization inconvenient	07 (77.78)	02 (22.22)	09 (13.43)
Any other	02 (40.00)	03 (60.00)	05 (7.46)

Table 5: The number of episodes of ARI and diarrhoea in the preceding one year (n=154).

Number of Episodes	Male Number (%)	Female Number (%)	Total Number (%)
ARI			
0	37 (54.41)	31 (45.59)	68 (44.16)
1-3	19 (59.38)	13 (40.62)	32 (20.78)
4-6	24 (58.54)	17 (41.46)	41 (26.62)
>6	9 (69.23)	4 (30.77)	13 (8.44)
Total (mean-2.23)	89 (57.79)	65 (42.21)	154 (100.0)
Diarrhoea			
0	31 (54.39)	26 (45.61)	57 (37.01)
1-3	32 (60.38)	21(39.62)	53 (34.42)
4-6	19 (57.58)	14 (42.42)	33 (20.78)
>6	6 (54.55)	5 (45.45)	11 (7.14)
Total (mean-2.55)	89 (57.79)	65 (42.21)	154 (100.0)

Analysis of the data regarding immunization status of the children revealed that around 57% of the children were fully immunized with 1 Dose of BCG, 3 Doses of DPT and OPV, and 1 Dose of measles vaccines and slightly more than one third of children were found to be partially immunized and it was surprising to know that around 7% of the children had not received even a single dose of any of the vaccines (Table 3). Educational level of mothers and immunization status of the children had a significant statistical association. It was found that around 22% children of illiterate mothers were partially/not immunized as compared to the children of the mothers who had education primary and above (Figure 1). The main contributor of reasons for not availing the immunization services was found to be "Lack of information" regarding complete immunization (62.69%) followed by the fear of side effects (8.96%). Other reasons were family member's refusal (5.97%), health facility far (1.49%) and time of immunization inconvenient (13.43%) (Table 4).

Table 6: Literacy status of mother and their husband and its association with utilization of services for diarrhoea (n=61).

Socio-demographic variable	Utilization of services		Statistical Values
	Utilized	Not utilized	
	Number (%)	Number (%)	
Literacy status of mother			
Literate	29 (64.44%)	05 (31.25%)	
Illiterate	16 (35.56%)	11 (68.75%)	x^2 = 5.272 P < 0.05
Literacy status of father			
Literate	24 (53.33%)	09 (56.25%)	
Illiterate	21 (46.67%)	07 (43.75%)	x^2 = 0.04 P > 0.05
Total	45 (73.77%)	16 (26.23%)	61 (100%)

The overall prevalence of ARI was 31.82% and of diarrhoea was 39.61%. A total of 49 and 61 children had an episode of ARI and diarrhoea respectively in preceding 15 days. Observation shows that out of 154 children, 44.16% and 37.01% of children did not have a single episode of ARI or diarrhoea respectively during preceding one year. Only 8.44% and 7.14% children had more than six episodes of ARI and diarrhoea.

The mean number of episodes of ARI was 2.23 and of diarrhoea was 2.55 per child per year (Table 5).

Table 7: Source of seeking medical care in ARI and diarrhoea.

Condition	Health facility utilization		Total Number (%)
	Gov. (%)	Private (%)	
ARI	18 (58.05%)	13 (41.94)	31 (100.0)
Diarrhoea	28 (62.22%)	17 (37.78)	45 (100.0)

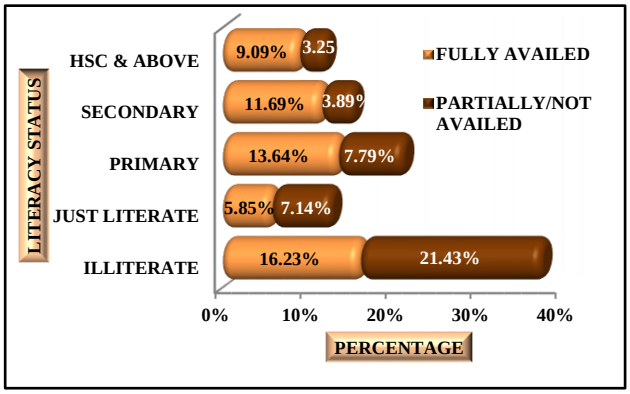

Figure 1: Utilization of immunization services and literacy status of mothers (n=154).

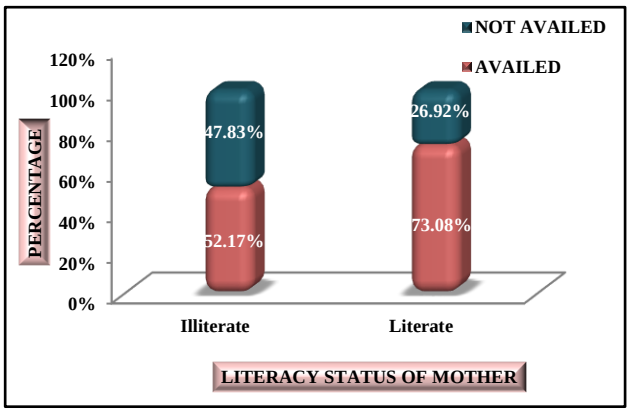

Figure 2: Literacy status of women and their health seeking attitude for ARI (n=49).

Mother's literacy status had a direct association with the utilization of services for diarrhoea. Among 45 respondents who had availed services, nearly 65% of respondents' mother were literate. In case of fathers' education, no such significant difference was found (Table 6). It was disappointing to know that out of 49 cases of ARI, nearly 37% (18) mothers had not availed any medical services.

As far as the literacy status of mother is concerned nearly 48% of illiterate mothers and 27% of literate mothers had not availed the services (Figure 2).

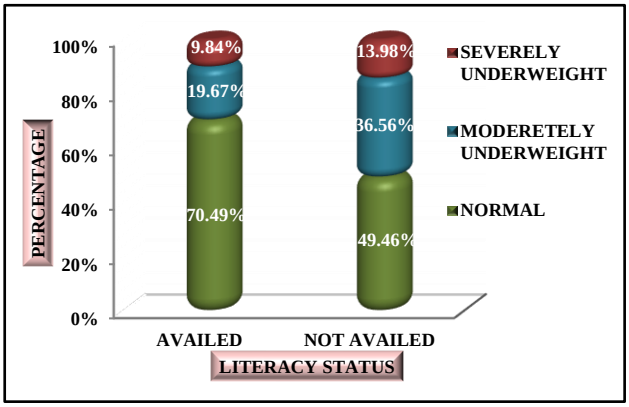

Figure 3: Nutritional status of children and utilization of supplementary nutrition services (n=154).

In majority of the respondents (58.05% and 62.22%) government institutions were the source of seeking medical attention in both the conditions (ARI and Diarrhoea) (Table 7).

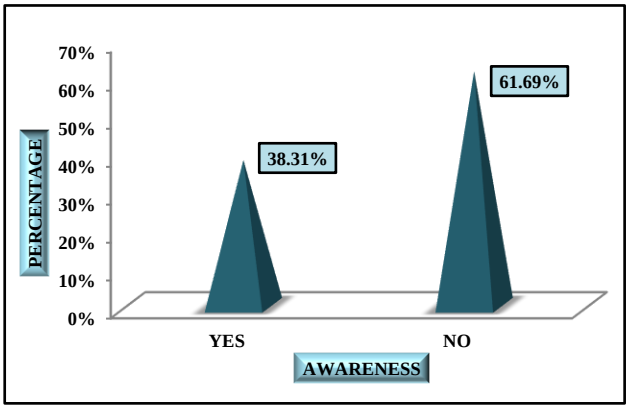

Figure 4: Awareness regarding child health programmes among parents (n=154).

It was found that out of total children, nearly 40% children had availed some kind of nutritional services provided by the government. Of the 61 children who availed nutritional services, 70.49% were normal, 19.67% were moderately malnourished and 9.84% were severely malnourished.

On the other hand, out of 93 children who did not avail nutritional services, nearly 37% and 14% of them were moderately and severely malnourished respectively.

Awareness regarding child health programmed among parents was found to be nearly 39% which was quite disappointing (Figure 3 and 4).

DISCUSSION

The present study was undertaken with the following objectives

- To study the utilization of child health services with respect to immunization, acute respiratory tract infections (ARTI) and acute diarrheal diseases in under five children,
- To find out the association of these factors with socio-demographic variables,
- To assess awareness regarding government health services focusing on child health among parents,
- To assess the health seeking behaviour of parents regarding acute respiratory tract infection (ARTI) and diarrhea,
- To find out reasons for non-utilization of child health services.

The study was undertaken in a rural area of Surendranagar district of Gujarat, India. 154 children of < 5 years of age were taken for the study purpose. Present study revealed that about 44% children were offered breastfeeding within one hour of birth. Similar to this result, DLHS 3 report of India, showed that 41% Children under 3 years of age were breastfed within one hour of birth and as per NFHS 3.[20,21] Gujarat fact sheet, around 26% children started breastfeeding within one hour. In present study pre-lacteal feeds were given to almost 48% of the babies and around 46% of the mothers discarded their colostrum. Raval D et al found that 38% infants were offered breastfeeding within one hour, around 62% of infants had received pre-lacteal feed and 63% mothers had discarded colostrum.

Similar to this 68.5% and 39% newborns were offered pre-lacteal feed and colostrum respectively as per Khan Z et al Exclusive breastfeeding rate was around 54%.[22,23] Nearly similar result was also observed by Khanal et al as per NFHS 3 and DLHS 3 India report, 46.3% and 46.8% children were exclusively breastfed.[20-22,24] About 37% children were exclusively breastfed as per Bagul A et al.[25] Around 7% of participants were put on complementary foods at ≤ 4 months; 25.32% between 4-6 months and around 63% at ≥ 6 months of age.

As per study of Bhanderi D et al around 52% & 48% respondents were put on complementary foods at < 6 months and ≥ 6 months respectively. Similar result was also noted by Bagul A et al.[25,26]

Study showed that about 38% of the children were breastfed for <6 months and about 62% ≥ 6 months. Similar observation was noted by Cesar et al, Ghambi et al and Arifeen et al in whose studies 67.32%, 60.62% and 58.57% children were breastfed for ≥ 6 months.[27-29] Initiation of breastfeeding, exclusive breastfeeding, time of introduction of complementary feeding and duration of breastfeeding were found to be positively associated with the utilization of health education services availed from health facility / health care personnel.

It was observed that around 38% of the respondents had not availed immunization card for their children. Around 23% of the respondents had not availed immunization card as per study conducted by Jha RK et al The present study indicated that around 57% of the children were fully immunized, 35.71% partially immunized and about 7% not immunized at all.[30] As per NFHS 3 and DLHS 3 43.5% and 54% children were fully immunized respectively and 24.9% and 54.5% children had taken vitamin A prophylaxis respectively.[20,21] Present study identified positive association between immunization status of child and education of mother. Similar association was also observed by Dubey DK et al, Dhandwal D et al and Yadav RJ et al.[31-33]

Reason for not availing the immunization services in majority (62.69%) was found to be “Lack of information” or “Unawareness” regarding immunization. Similar reasons were also identified by Punith K et al.[34] The other reasons they found were fear of side reaction (11.42%), inconvenient timing (17.14%) which were nearly similar to present study. Kariwal P et al also found that in majority (47.5%) the reason for non-immunization was unawareness for the need of vaccination.[35]

The overall prevalence of ARI was 31.82%. Findings of the present study is nearly similar to study conducted by Singh et al, Agarwal et al, and Deb SK et al in which the prevalence of ARI was found 27.33%, 29.12% and 28.52% respectively.[36-38] The prevalence of diarrhoea was 39.61%. The mean episodes of diarrhoea during preceding year in the present study was 2.55 which was more or less similar to the findings of Sutariya S et al (3.42).[39]

Out of total 61 and 49 children who had an episode of diarrhoea and ARI respectively within last 15 days, around 74% and 63% parents had availed services for diarrhoea and ARI. According to NFHS 3 60.2% and 67.5% children were taken to health facility who had an episode of diarrhoea and ARI respectively for availing the services.[21]

It was noted that nearly 37% and 26% of the parents did not seek any medical treatment for ARI and diarrhoea respectively. Most children (nearly 59%) had taken treatment for ARI from government institutions, whereas about 41% from private health facilities. In the case of diarrhoea, more than half (i.e. 62.22%) children had taken

treatment from government institutions and 37.78% from private health facilities.

Present study revealed that about 40% children had availed nutritional service provided by the government. However, 50.2% children from rural area had availed nutritional services as per NFHS 3 report.[21] A positive association was observed between utilization of nutritional services and nutritional status of children among study group.

Health education services availed from health facility / health care personnel regarding breastfeeding had positive impact on breastfeeding practices. Women who had availed information regarding breastfeeding during their antenatal, intranatal or postnatal period were following good practices as compared to women who did not avail the information regarding breastfeeding.

Out of total 98 mothers who had availed information regarding correct breastfeeding practices, around 59% offered colostrum to their babies, nearly half started breastfeeding their babies immediately or ≤ 1 hr. of birth, about 63% mothers practiced exclusive breastfeeding for 6 months, about half mothers started complementary feeding at 6 months and around 73% mothers breastfed their babies for ≥ 6 months. Literacy status of mothers had significant relation with the immunization status of their children as around 69% children of literate mothers were fully immunized compared to about 43% children of illiterate mothers. Lack of awareness regarding importance of complete immunization was found to be most potential reason for not availing immunization services.

CONCLUSION

The overall prevalence of ARI and diarrhoea was 31.82% and 39.61% respectively. The mean episode of ARI and diarrhoea was 2.23 and 2.55 respectively. Education of mothers affected the utilization of services for ARI and diarrhoea. Either illiterate or lower education (only up to primary) of mother was associated with lower utilization of services. Majority of parents preferred government facility for availing the health services for their children. Utilization of nutritional services provided by the government was found to be low as compared to NFHS 3. A positive association was observed between nutritional status and utilization of nutritional services.

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