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# Determinants Of Childhood Morbidity: Ari And Diarrhea In Tamil Nadu

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**Abstrac**t:Acute respiratory infections (ARI) and Diarrhea are the major causes for the under 5 mortality.  Two thirds of the IMR is being contributed by the Neo-natal mortality (NMR). The present paper highlights the correlates of major childhood morbidity like ARI and Diarrhea of children in Tamil Nadu using Chi Square and Logistic Regression analysis. The underprivileged population groups like Scheduled caste and Scheduled tribes are the targeted population and the determinants of childhood morbidity like illiterate women, children residing in Kachcha houses and the family not covered under health insurance scheme need more attention to reduce childhood morbidity.

**Keywords:**Childhood Morbidity, ARI, Diarrhea, Under privileged population

## INTRODUCTION:

The Reproductive and Child Health programme (RCH-II) under the National Rural Health Mission (NRHM) comprehensively integrates interventions that improve child health and addresses factors contributing to Infant and under-five mortality. Reduction of infant and child mortality has been an important tenet of the health policy of the Government of India and it has tried to address the issue right from the early stages of planned development. The National Population Policy 2000, the National Health Policy 2002 and the Eleventh Five Year Plan (2007-12) and National Rural Health Mission (NRHM: 2005–2012) have laid down the goals for child health. There are eight goals under MDGs, where Goal No. 4 is dedicated to reduction in child mortality. The Vital Events Survey (1999), again, found a wide range of IMR variation from 14.3 in Chennai to 80.7 in Dharmapuri. The districts of Dharmapuri, Salem, Theni and Perambalur contributed maximally to the State's pool of infant deaths. In terms of the states with high percentages of neonatal death rates, Tamilnadu is the third worst in the country.

In general, Malnutrition has been a major problem in India, Tamilnadu in particular. Persistence of malnutrition, in general, among all segments of the population (correlated with socioeconomic status), and in particular, child, adolescent girl and maternal-malnutrition  has been identified as a serious problem by the State Planning Commission.

The National Family Health Survey-3, for Tamilnadu reported 47 percent of all children below 4 years are of underweight and 13 percent are severely malnourished. The National Nutrition Monitoring Bureau Reports, again, indicate high levels of micro-malnutrition in Tamilnadu with   62 percent of children in rural Tamilnadu had diarrhea, compared to the national average of  59.5 percent Studies have shown that the ICDS/TINP areas have a better record with regard to malnutrition, IMR, preschool education etc. But infrastructural problems have plagued the ICDS centres constantly.

Diarrheal disease forms one of the major killer diseases in children under five years of age in the developing world in addition to diseases like ARI, Measles and other such infections. In India, presently the Diarrheal morbidity stands at 1.07 million cases and mortality stands at 2040 in these children.

Acute Respiratory infection (ARI), primarily pneumonia, is a major cause of illness among infants and children and the leading cause of childhood mortality throughout the world (Murray and Lopez, 1996). Early diagnosis and treatment with antibiotics can prevent a large proportion of ARI deaths.

The children belonging to under privileged population groups in Tamil Nadu, namely, Scheduled caste and Scheduled tribe suffered much higher from child hood diseases like ARI and Diarrhea than other groups. The present research paper highlights the current situation and explains the correlates and factors that are associated with childhood diseases like Diarrhea and ARI in  Tamil Nadu.

## REVIEW OF LITERATURE:

Infectious diseases like diarrhea, acute respiratory infection (ARI), malaria and whooping cough have been found to be the world's leading cause of morbidity and premature death especially among the children in developing countries (Lakshmi et.al, 2005). According to the World Health Report [WHO, 2004] 6.9 percent of deaths in children were attributed to respiratory infections, 2.2 percent to malarial and 2.0 percent to other childhood diseases.

Three fifth of under five years children had diarrhea whose parents did not use any method for purification of

drinking water whereas 19.1 percent under five children had diarrhea whose parents were filtering with cloth or net [Chaudhari et.al., 2008].

Report of National Child Survival and Safe Motherhood Programme (1994), New Delhi showed incidence of Diarrhea as 1.2 episodes / child / year in Bihar and 3.5 episodes / child / year in Jammu and Kashmir and Tamil Nadu.

NFHS-2 found that 19 percent of children under age 3 in Andhra Pradesh suffered from ARI (cough accompanied by short, rapid breathing). Acute Respiratory Infections is an important childhood morbidity. Point prevalence (prevalence at a specific point in time) of ARI in AP was lower compared to Kerala, Madhya Pradesh and Orissa. Other neighboring states like Tamil Nadu, Karnataka and Maharashtra had lower point prevalence of ARI.

Diarrhea is the second most important killer of children under five worldwide. Deaths from acute Diarrhea are most often caused by dehydration due to loss of water and electrolytes. Nearly all dehydration related deaths can be prevented by prompt administration of rehydration solutions. According to NFHS-2, 15 percent of children under age 3 suffered from Diarrhea. Among children in the age group 1-35 months, those in the age range 6-11 months are most susceptible to Diarrhea. Children belonging to scheduled castes and tribes were more likely to have experienced Diarrhea compared to other groups. It was observed that young children below six months of age and older children more than 35 months are less likely to experience Diarrhea compared to children aged 6-35 months.

The findings of the present study will be helpful for the policy makers and program implementors in re-orienting the program for child health related to childhood diseases like ARI and Diarrhea.

**OBJECTIVE:**

The objective of this paper is to examine the determinants of childhood morbidity ARI and Diarrhea of children in Tamil Nadu.

**METHODOLOGY:**

The present paper utilizes the district level household survey (DLHS) data. In order to analyse the above objectives, the recently available DLHS-3 data has been used, which is undertaken by International Institute for Population Sciences (IIPS), Mumbai, under the guidance of Ministry of Health and Family Welfare, GoI in 2007–08. This paper utilizes only the information collected from the women who are currently married and in the age group of 15-44 years in the state of Tamil Nadu. It utilizes the sample of 32623 households into consideration, in which 26,685 women were interviewed both from rural and urban residence by taking all the 30 districts of Tamil Nadu. The recently published National Health Profile 2010 data of government of India was also used. Logistic regression and Chi-square analysis was carried out to find out the determinants of childhood morbidity like ARI and Diarrhea in Tamil Nadu and to know the variables which are significantly associated and to determine the influencing factors for the childhood morbidity.

**RESULTS AND DISCUSSION:**

ARI and Diarrhea: India and Tamil Nadu Scenario:

As per the report published from National Health Profile regarding deaths due to Acute Diarrheal Diseases in India 2010 reported as West Bengal (368), Andhra Pradesh (214), Uttar Pradesh (132) and Madhya Pradesh (107) ranked top positions and in Tamil Nadu it was reported as 47 deaths. Due to ARI the states hold the top ranks of child deaths were West Bengal (411), Andhra Pradesh (275), Madhya Pradesh (238) and Tamil Nadu (234). Due to Pneumonia the child death was reported higher in West Bengal (655) followed by Delhi (485), Orissa (406),Uttar Pradesh (206) and in Tamil Nadu it was 51.

As per nutritional status of children under five years, who were stunted, was 30.9 percent, wasted (22.2 percent) and underweight (29.8 percent) compared with Indian average of 48.0, 19.8 and 42.5 respectively. It is observed from Table 1 that 53 percent of Ever married women aged 15-49 years and pregnant women in the age group were anaemic. Similarly 17 % of men aged 15-49 years and 64% of children aged 6-59 months were anaemic as per NFHS -3 (2005-06) reports.

**Table 1: Percentage of Anaemia among Children and Adults in India and Tamil Nadu**

| State | Children aged 6 -59 months anaemic | Ever - married women aged 15 -49 anaemic | Pregnant women aged 15 -49 anaemic | Ever - marrried men aged 15 -49 anaemic |
|---|---|---|---|---|
| India | 69.5 | 55.3 | 57.8 | 24.2 |
| Tamil Nadu | 64.2 | 53.2 | 53.3 | 16.5 |

Source: National Family Health Survey-III (2005-06).

From Table 1, it is observed that 64 percent of children aged 6-59 months were anaemic, 53 percent of ever married women and pregnant women aged 15-49 years were anaemic and 17 percent of men aged 15-49 years were anaemic.

MDG and National Rural Health Mission (NRHM: 2005–2012) has laid down the goals for child health, which is shown in the following Table-2. Though Tamil Nadu have achieved the goals in total regarding IMR and under 5 mortality rates, the neo-natal mortality is higher than Indian average, which has to be reduced further. The main factors such as underprivileged population groups (SC/ST) have to be educated to reduce the same.

**Table 2: Child Health Indicator for India and Tamil Nadu**

| Child Health Indicator | Current status (per 1000 live births) | | RCH II/ NRHM 2010/2012 | MDG 2015 |
|---|---|---|---|---|
| | India | Tamil Nadu | | |
| IMR (Infant Mortality Rate) | 50 | 28 | <30 | 28 |
| Neonatal Mortality rate | 34 | 59.5 | <20 | <20 |
| Under 5Mortality Rate | 64 | 33 | -- | <38 |

Source: Sample Registration System (SRS) 2009

The knowledge about diarrhea management was reported by two-thirds (65.9 percent) of women and only 6.9 percent were aware of danger signs of ARI as per DLHS-3 report. As per the statement of women whose children had diarrhea, followed the practices for treatment of children were to give salt and sugar solution (44.9 percent), ORS (Oral Rehydration Salt) (31.1 percent), plenty of fluids (9.2 percent) and continue normal food (2.6 percent). Seventy three percent of children had sought advice/treatment and 37.5 percent among them were treated by ORS and among them 6 percent of children suffered from Diarrhea. About two-fifth (40.6 percent) of the children who had suffered from Diarrhea has gone for treatment in government health center and 57.8 percent in private health clinic. Only 0.7 percent children suffered from Diarrhea in last two weeks prior to the survey and all among them were sought advice/treatment in Thiruvallur and 18.3 percent children suffered from Diarrhea and 70.9 percent of them sought advice/treatment in Virudhunagar district.

Only seven percent of women were aware about danger signs of ARI in Tamil Nadu. Sixty-four percent, 31.1, 23.8 and 29.9 percent of women know that difficulty in breathing, pain in chest and productive cough; wheezing/whistling and rapid breathings are the danger signs of ARI respectively. The prevalence of ARI among children in Tamil Nadu is 8.1 percent. Among them, 85 percent of the children had sought advice/treatment mostly at a private health facility (62.3 percent). The prevalence of ARI among children varies from 19.9 percent in Virudhunagar district to 0.8 percent in Tiruvannamalai and Krishnagiri districts. None of the children suffered from ARI in Chennai. The percentage of children who sought advice/treatment for ARI or fever ranges from 100 percent in Thiruvallur and Tiruvannamalai district to 50 percent in Kancheepuram district. Less than 80 percent of children sought advice/treatment for ARI or fever in Chennai, Kancheepuram, Dharmapuri, Nilgiris, Coimbatore, Thiruvarur, Thanjavur, Theni and Ramanathapuram districts.

**ARI and Diarrhea of under privileged population groups in Tamil Nadu:**
According to DLHS-3, children belonging to SC/ST received check up within 24 hours of births reported as only 70 and 82 percent respectively compared with OBC (88 percent). Fifty two percent of OBC children received check up at private hospitals but 75 percent of children belonging to SC/ST preferred only government health facilities.

Percentage of children received Colostrum was reported as 94 percent by SC and OBC children and 97 percent of children belonging to ST received Colostrum which is shown in Table 3. Seventy one percent of children (0-5 months) belonging to SC received exclusive breastfeeding compared with children belonging to OBC (59 percent).

**Table 3: Percentage of children received Colostrum and Exclusive Breastfeeding**

| Castes/Tribes | Children received Colostrum/Khees | Exclusive breastfeeding | |
|---|---|---|---|
| | | 0-5 months | No. of children |
| **Scheduled Castes** | 94.5 | 71.4 | **218** |
| **Scheduled Tribes** | 97.0 | (66.7) | **15** |
| **OBC** | 94.0 | 58.5 | **651** |
| **Tamil Nadu** | **94.2** | **61.7** | **890** |

Source: DLHS-3 (2007-08)

Table 4 shows that percentage of SC/ST children aged under 3 years whose mother started breastfeeding within one hour of birth, within 24 hrs of birth reported higher than children belonging to OBC. Children breastfeeding and the Caste are not significantly associated.

**Table 4: Percentage of children received Breastfeeding**

| Castes/Tribes | Children Breastfeeding | | | No. of children |
|---|---|---|---|---|
| | Within one hour of birth | Within 24 hrs of birth | After 24 hrs of birth | |
| **Scheduled Castes** | 80.9 | 94.9 | 5.1 | **1,645** |
| **Scheduled Tribes** | 86.2 | 93.9 | 6.1 | **102** |
| **OBC** | 74.0 | 92.7 | 7.3 | **3,991** |
| **Tamil Nadu** | **76.1** | **93.4** | **6.6** | **5801** |
| **Chi-square** | 0.865,   0.929 * | | | |

Source: DLHS-3 (2007-08)          * not significant

From Table 5, it is clear that percentage of children aged 12-35 months received at least one dose of Vitamin-A, 3-5 doses of Vitamin-A and Hepatitis-B injection by SC/ST children was reported lower than OBC children. Though the children breastfed fully but due to improper or not receiving Vitamin-A / Hepatitis B leads to diseases to the children. Children receiving Vitamin-A doses and the children belongs to different caste are significantly associated at 1% level of significance.

**Table 5: Percentage of Children received Vitamin A and Hepatitis B injection**

| Castes /Tribes | Children who received at least one dose of Vitamin -A | Children who received 3 - 5 doses of Vitamin -A | Children who received Hepatitis - B injection | No. of children |
|---|---|---|---|---|
| **Scheduled Castes** | 76.3 | 29.3 | 73.8 | **1,143** |
| **Scheduled Tribes** | 72.9 | 27.1 | 76.0 | **66** |
| **OBC** | 78.0 | 31.1 | 82.8 | **2,679** |
| **Tamil Nadu** | **77.5** | **30.3** | **80.1** | **3,937** |
| **Chi-square** | **19.005** | **0.008 *** | | |

: DLHS-3 (2007-08)          * significant at 1%

Percentage of women who are aware of Diarrhea management as per DLHS-3, Tamil Nadu, 2007-08 was reported in the following Table 6. Knowledge of Diarrhea management is only 47 percent for ST, 66 percent for the children belonging to SC and OBC. The practice of giving ORS was reported as 31 percent for OBC and SC and 35 percent for ST. Forty one percent of mothers belong to SC, 48 percent of ST and 46 percent of OBC followed giving salt and sugar solution.

From the analysis of Chi square, it is also clear that Caste is significantly associated with type of practices followed if child gets Diarrhea and significant at 1% level of significance.

**Table 6: Percentage of Knowledge of Diarrhea management and type of practices followed**

| Caste | Knowl edge | Type of practices followed if child gets Diarrhea | | | | | | No. of women |
|---|---|---|---|---|---|---|---|---|
| | | ORS | Salt and sugar | normal food | breast feed ing | plenty of fluid | Other | |
| SC | 65.9 | 30.5 | 41.1 | 2.2 | 2.7 | 8.8 | 49.6 | 6,754 |
| ST | 47.4 | 35.3 | 48.1 | 2.2 | 2.2 | 5.9 | 33.1 | 465 |
| OBC | 66.2 | 31.1 | 45.8 | 2.8 | 2.9 | 9.5 | 47.5 | 19,124 |
| **TN** | **65.9** | **31.1** | **44.9** | **2.6** | **2.8** | **9.2** | **47.7** | **26,685** |
| | | Chi-square | | | **154.5,** | **0.000 *** | | |

Source: DLHS-3 (2007-08)          * significant at 1%

Fifty eight percent of children who belong to SC prefer government health facilities and 35 percent of OBC children go for treatment for the same at private health facilities which is shown in Table 7. Though the government concentrated and spend more money for government health facilities, 41 percent of SC mothers and 63 percent of OBC mother still prefer only private health facilities. This shows lack of monitoring of government service utilization and health personnel to be trained to motivate people to overcome this situation. Treatment sought by the children and the Caste are significant at 5% level of significance.

**Table 7: Percentage of Children sought treatment for Diarrhea at place of treatment**

| Castes | Sought treatment | | | No. of children |
|---|---|---|---|---|
| | Govt. health facility | Private health facility | Other | |
| Scheduled Castes | 57.6 | 41.1 | 4.9 | 81 |
| Schedule Tribes | - | - | - | (1) |
| OBC | 35.4 | 63.4 | 4.1 | 244 |
| Tamil Nadu | **40.6** | **57.8** | **4.6** | **328** |
| **Chi-square** | | **10.435** | **0.005 *** | |

Source: DLHS-3 (2007-08)          * Significant at 1%

Regarding danger signs of Acute Respiratory Infection ARI, only 3 percent of ST women, 4 percent of SC women and 8 percent of OBC were aware of danger signs. Table 8 clearly shows that awareness of under privileged population group is very low and suffered more from ARI though most of them prefer government health facilities. Caste and mothers of children who were aware of danger signs of ARI are significantly associated at 5% level of significance.

**Table 8: Percentage of Women aware of ARI and danger signs of ARI**

| Castes | Aware | No. of women | Danger signs of Acute Respiratory Infection (ARI) | | | | |
|---|---|---|---|---|---|---|---|
| | | | Difficulty in breathing | Pain in chest | Whee zing/ whist ling | Rapid brea thing | Other signs |
| SC | 4.1 | 6,754 | 67.7 | 26.9 | 20.9 | 28.0 | 28.8 |
| ST | 3.0 | 465 | 64.8 | 22.2 | 29.0 | 14.1 | 43.0 |
| OBC | 7.9 | 19,124 | 62.8 | 31.6 | 24.2 | 30.0 | 28.6 |
| Others | 15.8 | 295 | 57.8 | 37.8 | 25.6 | 40.4 | 31.8 |
| **TN** | **6.9** | **26,685** | **63.5** | **31.1** | **23.8** | **29.9** | **28.9** |
| | | | Chi-square | | **22.136** | **0.036 *** | |

Source: DLHS-3 (2007-08)          * Significant at 5%

Table 9 explains that children who belong to SC, ST and OBC suffered from ARI was reported as 7.3 percent, 4.4 percent and 8.5 percent respectively. Among them only 58 percent of ST, 84 percent of SC and 85 percent of OBC children sought advice/treatment.

**Table 9: Percentage of Children suffered from ARI, sought advice/treatment**

| Castes/Tribes | Children suffered from ARI | Children sought advice/ treatment | No. of children |
|---|---|---|---|
| Scheduled Castes | 7.3 | 83.5 | 2,249 |
| Scheduled Tribes | 4.4 | 58.3 | 138 |
| OBC | 8.5 | 85.2 | 5,484 |
| Others | 1.4 | 100 | 74 |
| **Tamil Nadu** | **8.1** | **84.6** | **7960** |

Source: DLHS-3 (2007-08)

Fifty percent of SC/ST children and 67 percent of OBC children go for treatment at private health facilities and the remaining children go for treatment at government health facilities. Caste and mothers of children who were aware of danger signs of ARI and children sought treatment are significantly associated at 5% level of significance which is shown in Table 10.

**Table 10: Percentage of Children sought treatment for ARI at place of treatment**

| Castes/Tribes | Source of treatment | | | No. of children |
|---|---|---|---|---|
| | Govt. health facility | Private health facility | Others | |
| Scheduled Castes | 50.3 | 49.7 | 0.0 | 2,249 |
| Scheduled Tribes | 50.0 | 50.0 | 0.0 | 138 |
| OBC | 32.9 | 66.5 | 0.5 | 5,484 |
| Others | 33.3 | 66.7 | 0.0 | 74 |
| **Tamil Nadu** | **37.3** | **62.3** | **0.4** | **7960** |
| **Chi-square** | | **11.904** | **0.007*** | |

Source: DLHS-3 (2007-08)          * Significant at 5%

Determinants of childhood morbidity like ARI and Diarrhea in Tamil Nadu was derived from the analysis of Logistic regression and Chi-square analysis. From Chi-square analysis, Table 11, it is found that children suffered from ARI or Diarrhea is significantly associated with religion, safe drinking water, type of house, household covered under health insurance scheme and education of women. The other variables such as caste, toilet facility, BPL, age of women, age at marriage and type of residence are not significantly associated.

**Table 11: Chi Square analysis: ARI and Diarrhea Vs Background characteristics**

| Variables | Value | Sig |
|---|---|---|
| ARI, Diarrhea* religion | 9.778 | .021* |
| ARI, Diarrhea * caste | 5.192 | .075 |
| ARI, Diarrhea *safe drinking water | 15.699 | .000** |
| ARI, Diarrhea * toilet facility | .001 | .977 |
| ARI, Diarrhea * type of house | 15.870 | .000** |
| ARI, Diarrhea * possess BPL | 2.594 | .107 |
| ARI, Diarrhea * member covered under health scheme | 4.624 | .032* |
| ARI, Diarrhea * age of women | 10.942 | .090 |
| ARI, Diarrhea * education of women | 18.774 | .001** |
| ARI, Diarrhea * age at marriage of women | .432 | .806 |
| ARI, Diarrhea * type of locality | 2.487 | .115 |

Note:    * Significant at 5%,      ** Significant at 1%

Logistic regression analysis technique was carried out by taking the dependent variable as dichotomous (yes = 1 / no =2) by considering children suffered from ARI or Diarrhea as 1 and children not suffered from the same as 0. The variables such as Religion, Caste, Water treatment, Type of house, member covered by health insurance and education of women were significantly associated with children suffered from ARI or Diarrhea. These variables are the influencing factors for the childhood morbidity by controlling all other variables. Type of residence, Age and Age at marriage of women are not significant which is explained in the following Table 12.

## Table 12: Logistic Regression analysis: ARI and Diarrhea

| Logistic regression analysis: ARI and Diarrhea | B | S.E. | Wald | df | Sig. | Exp(B) |
|---|---|---|---|---|---|---|
| Type of locality   (Rural: R) | .116 | .101 | 1.320 | 1 | .251 | 1.123 |
| Religion (Hindu  : R) | | | 10.693 | 3 | **.014** | |
| Muslim | .316 | .143 | 4.850 | 1 | .028 | 1.371 |
| Christian | -.347 | .159 | 4.760 | 1 | .029 | .707 |
| Others | .109 | .804 | .018 | 1 | .892 | 1.115 |
| Caste (SC:  R) | | | 8.669 | 2 | **.013** | |
| ST | -.082 | .821 | .010 | 1 | .920 | .921 |
| Others | -.429 | .147 | 8.563 | 1 | .003 | .651 |
| Water treatment (Yes    : R ) | .228 | .098 | 5.435 | 1 | **.020** | 1.256 |
| Toilet facility shared    (Yes: R) | .009 | .121 | .005 | 1 | .941 | 1.009 |
| Type  of house ( Kuchcha : R ) | | | 13.088 | 2 | **.001** | |
| Semi pucca | -.062 | .621 | .020 | 1 | .820 | .821 |
| Pucca | -.042 | .451 | .030 | 1 | .720 | .751 |
| Possessed BPL Card    (Yes: R) | .255 | .188 | 1.833 | 1 | .176 | 1.291 |
| Member covered Health insurance  (Yes : R ) | -.517 | .247 | 4.369 | 1 | **.037** | .597 |
| Age ( 15-19 : R ) | | | 5.295 | 6 | .507 | |
| 20 - 24 | .000 | .295 | .000 | 1 | 1.000 | 1.000 |
| 25 - 29 | .208 | .301 | .479 | 1 | .489 | 1.231 |
| 30 - 34 | .257 | .318 | .651 | 1 | .420 | 1.293 |
| 35 - 39 | .407 | .381 | 1.143 | 1 | .285 | 1.503 |
| 40+ | .516 | .636 | .658 | 1 | .417 | 1.675 |
| Education (  Illiterate : R ) | | | 20.467 | 4 | **.000** | |
| 1 - 5 | -.933 | .357 | 6.823 | 1 | .009 | .393 |
| 6 - 10 | -.828 | .335 | 6.115 | 1 | .013 | .437 |
| 11 - 12 | -.947 | .346 | 7.502 | 1 | .006 | .388 |
| Graduates | -.418 | .351 | 1.420 | 1 | .233 | .658 |
| Age at marriage    ( <18 : R ) | | | 2.066 | 2 | .356 | |
| 18 - 21 | .053 | .127 | .175 | 1 | .675 | 1.054 |
| 22+ | -.120 | .144 | .687 | 1 | .407 | .887 |
| Constant | 1.602 | .571 | 7.872 | 1 | .005 | 4.961 |
| -2 Log likelihood | 2880.79 | | | | | |
| Nagelkerke R Square | .045 | | | | | |
| Overall Percentage | 75.0 | | | | | |

Note: R:  Reference Category

Logistic regression analysis resulted that children belonging to Muslim and other religion was 1.3, 1.1 times more likely to experience childhood morbidity like ARI and Diarrhea than Hindu and Christian children. Children belonging to the Scheduled Caste were more likely to experience reproductive morbidity than children belonging to ST and OBC. Those who have not treated water were 1.2 times more likely to experience childhood morbidity. Those who are residing in Semi pucca and Pucca houses were less likely to experience childhood morbidity than children residing in Kuchcha houses. Members covered under health insurance scheme were less likely to experience childhood morbidity. Children born to illiterate mothers were more likely to experience childhood morbidity than children of literate mothers.

## CONCLUSION AND SUGGESTIONS:

Children suffered from ARI or Diarrhea is significantly associated with religion, safe drinking water, type of house, household covered under health insurance scheme and education of women. The other variables such as Caste, toilet facility, possession of BPL card, age of women, age at marriage and type of locality are not significantly associated.

Children belonging to Muslim religion, Scheduled Caste, children residing in Kachcha houses, children whose parents not covered under health insurance scheme, Children born to illiterate mothers were more likely to experience childhood morbidity like ARI and Diarrhea than their counterparts.

The underprivileged population groups like Scheduled caste and Scheduled tribes are the targeted population groups and the determinants of childhood morbidity like illiterate women, children residing in kachcha houses and the family not covered under health insurance scheme need more attention to reduce childhood morbidity. Policy makers and programme implementors may formulate a suitable strategy to address the children and new born for eliminating childhood diseases and improving child health by creating awareness among mothers of underprivileged population groups, namely, Scheduled Caste and Scheduled Tribes.

## REFERENCES

Chaudhari P.C., Srivastava R.K. and Desai V.K.; 2008; Domestic environment and morbidity of under five children; Indian Journal of Pediatrics 75(5): 514-515.

District Level Household Survey-Reproductive and Child Health, DLHS-3 (2007-08), International Institute for Population Sciences, Mumbai.

Govt of India 2006. health information of India (2005) Ministry of health & family welfare  New Delhi.

Govt. of India National Survival and safe motherhood programme, MCH division, Department of family welfare, Ministry of Health & Family Welfare, New Delhi 1994 ; P 79.

Lakshmi J., Khyrunnisa B., Saraswathi G. and Jamuna P.; 2005; Influence of nutrition and environment on morbidity profile of India preschool children; Mal J Nutr 11(2): 121-132.

National Family Health Survey-III (2005-06), MOHFW / GOI

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