Original Research Article

Childhood Disease Treatment: Distribution and Prevalence in Different Division of Uttarakhand State

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ABSTRACT

Background: Child mortality has been a major setback in developing countries. The utilization of health care services and treatment to fight against common childhood disease has been top priority to enhance the quality of child health in India.

Material and Methods: The study was carried out from the secondary data source i.e. factsheets on 13 districts of Uttarakhand which is divided into two regions, Garhwal and Kumaun; available from the National Family Health Survey-4 (2015-16). Z-test is used for comparison between two regions and within inters districts of Uttarakhand.

Result: The study indicates major differences in the utilization of childhood disease treatment across the state. Kumaun has better utilization of treatment for both diarrhoea and Acute Respiratory Infections. Nainital and Almora recorded high use of treatment, whereas Udham Singh Nagar performance was below satisfaction. Similarly in Garhwal division, Dehradun and Chamoli district had the best utilization of treatment for kids suffering from diarrhoea and ARI, whereas performance was Uttarkashi and Tehri-Garhwal district was far from being reasonable.

Conclusion: The high rates of child mortality are a cause of concern for Uttarakhand as they reflect the prosperity of state. Garhwal requires more attention in terms of childhood disease treatment along with certain other districts of Kumaun. To achieve our goals for child health it is essential to inform people about various treatment practices and health services provided by the government in high risks areas, for combating such life-threatening diseases.

Keywords: Diarrhoea, Childhood disease, Kumaun, Garhwal, Uttarakhand.

INTRODUCTION

India is committed to reduce child deaths by two-thirds as pledged in the Millennium Development Goals (MDG) and has made steady progress. Several programmes on immunization and stimulating awareness amongst people for prevention of ARIs and diarrhoeal diseases have helped in reducing mortality amongst kids less than five years. Still, acute respiratory infections (ARIs) and diarrhoea contributes to major disease associated mortality and morbidity among children and have overlapping risks factors. [1,2]

Uttarakhand was recently declared as the fourth state of India to be open defecation free, but still there are prevalence of diarrhoea continues with 17% in the state. [3] Government intervention for prevention of childhood disease has been on a full swing in form of various programmes under National Rural Health Mission and Integrated Action Plan for Prevention and Control of Pneumonia and Diarrhoea

(IAPPD). Still it still lags behind in meeting the UN child health target. [4]

As child health is an important indicator of child prosperity index and overall health of the state. Child survival efforts can only be effective if the information about the distribution of treatment of childhood disease and its prevalence is identified. This information is needed to prioritize interventions, plan of action and deeper insights to plan control of childhood diseases. Thus, study was conducted with an aim to identify the distribution of childhood disease burden in the two divisions of Uttarakhand: Kumaun and Garhwal.

MATERIALS AND METHODS

The study was carried out using the secondary data of Uttarakhand available from National Family Health Surveys-4 conducted in 2015-2016. NFHS-4 fieldwork for Uttarakhand was from 30, January 2015 to 19, July 2015 by Institute of Health Management Research (IIHMR University) and gathered information from 15,171 households, which had 17,300 women and 1,994 men. Fact sheets for each district of Uttarakhand were also utilized for the studies. [5,6]

Statistical Analysis

The Z test for two-population proportion was applied for different study indicators. Corresponding p-value is calculated and if $p>0.05$, H_0 is accepted and if $p<0.05$, then H_0 is rejected at 5 % of level of significance.

RESULTS

A significant difference in distribution of childhood disease treatment is present between the two divisions: Kumaun and Garhwal, (Table 1) in terms of children who received ORS (p-value 0.0), who received zinc (p-value 0.0), children taken to health facility suffering from diarrhoea (p-value 0.0) and acute respiratory infection (p-value 0.0). Kumaun has higher proportion of children who received both ORS (p-value 0.0002) and zinc (p-value 0.0) and visited health facility during diarrhoea (p-value 0.0) and ARI (p-value 0.0).

Table 1: Distribution of childhood disease treatment according to regions and its comparison with state.

Indicators	Garhwal&Kumaun Division (p-Value)	GARHWAL & UTTRAKHAND (p-Value)	KUMAUN & UTTRAKHAND (p-Value)
Prevalence of diarrhoea (reported) in the last 2 weeks preceding the survey (%)	0.95216	0.81034	0.85716
Children with diarrhoea in the last 2 weeks who received oral rehydration salts (ORS) (%)	0.00	0.01596	0.0002
Children with diarrhoea in the last 2 weeks who received zinc (%)	0.00	0	0.00
Children with diarrhoea in last 2 weeks taken to health facility (%)	0.00	0.47152	0.00
Prevalence of symptoms of acute respiratory infection (ARI) in the last 2 weeks preceding the survey (%)	0.05486	0.3125	0.35758
Children with fever or symptoms of ARI in the last 2 weeks preceding the survey taken to a health facility (%)	0.00	0.40654	0.00

Table 2: Distribution of childhood disease treatment in Garhwal region and its comparison with its corresponding districts.

Indicators	Chamoli	Dehradun	Hardwar	Pauri Garhwal	Rudraprayag	Tehri Garhwal	Uttarkashi
Prevalence of diarrhoea (reported) in the last 2 weeks preceding the survey (%)	20.1 (0.121)	17.9 (0.77)	18 (0.72)	14.7 (0.101)	174 (1.00)	14.5 (0.076)	21.9 (0.01)
Children with diarrhoea in the last 2 weeks who received oral rehydration salts (ORS) (%)	60.8 (0.779)	56.4 (0.02)	63.8 (0.267)	64 (0.23)	69.9 (0.00)	53.9 (0.001)	60.9 (0.81)
Children with diarrhoea in the last 2 weeks who received zinc (%)	6.9 (0)	22.2 (0)	46.2 (0.002)	65.4 (0)	19.1 (0)	57.4 (0)	58.5 (0)
Children with diarrhoea in the last 2 weeks taken to a health facility (%)	50.2 (0)	75.4 (0.83)	83.5 (0)	84.1 (0)	69.5 (0.006)	78.4 (0.07)	83.7 (0)
Prevalence of symptoms of acute respiratory infection (ARI) in the last 2 weeks preceding the survey (%)	5 (0.152)	1.1 (0.001)	6.7 (0.002)	4.7 (0.72)	2.1 (0.033)	1.3 (0.006)	5.3 (0.810)
Children with fever or symptoms of ARI in the last 2 weeks preceding the survey taken to a health facility (%)	64.1 (0)	85 (0.006)	86.6 (0.0002)	85.3 (0.004)	80.8 (0.81)	78.8 (0.37)	82.4 (0.25)

Distribution of childhood disease treatment in various districts of Garhwal is presented in Table 2; Children who received ORS during diarrhoea are high in Rudraprayag (p-value 0.0), Tehri-Garhwal (p-value 0.001) and Dehradun (p-value 0.02). Treatment of diarrhoea using zinc was prevalent in all the districts. High proportions of children suffering from diarrhoea are taken to health facility in most of the districts except Dehradun and Tehri-Garhwal.Chamoli (p-value 0.0) has the highest proportion of children suffering from ARI who are taken to health facility.

The childhood disease treatment distribution for Garhwal division id presented in Table 3, Champawat district (p-value 0.0) and Pithoragarh (p-value 0.0) has the highest utilization of ORS for treatment of diarrhoea amongst children. Bageshwar (p-value 0.001), Champawat (p-value 0.004) and Almora (p-value 0.05) recoded highest proportion of children who received zinc during diarrhoea. Children with diarrhoea who were taken to health facility was highest in Almora (p-value 0.0) and Udham Singh Nagar (p-value 0.0), whereas for Ari it was in Bageshwar (p-value 0.0).

Table 3: Distribution of childhood disease burden in Kumaun region and its comparison with its corresponding districts.

Indicators	Almora	Bageshwar	Champawat	Pithoragarh	Nainital	Udham Singh Nagar
Prevalence of diarrhoea (reported) in the last 2 weeks preceding the survey (%)	15.1 (0.18)	21.1 (0.031)	15.2 (0.204)	21.1 (0.031)	16.2 (0.509)	15 (0.161)
Children with diarrhoea in the last 2 weeks who received oral rehydration salts (ORS) (%)	64.1 (0)	46.5 (0.562)	43.1 (0.012)	31.9 (0)	52.8 (0.025)	48.4 (0.78)
Children with diarrhoea in the last 2 weeks who received zinc (%)	11.7 (0.05)	9.5 (0.001)	19.6 (0.004)	14.1 (0.704)	16.1 (0.38)	17.3 (0.112)
Children with diarrhoea in the last 2 weeks taken to a health facility (%)	43.6 (0)	57.9 (0.22)	64.3 (0.08)	52.8 (0.001)	65.6 (0.02)	79.3 (0)
Prevalence of symptoms of acute respiratory infection (ARI) in the last 2 weeks preceding the survey (%)	3.4 (0.023)	6.5 (0.347)	7.9 (0.034)	4.5 (0.303)	5.2 (0.76)	5.5 (1.00)
Children with fever or symptoms of ARI in the last 2 weeks preceding the survey taken to a health facility (%)	63.5 (0.006)	60 (0.00)	67.9 (0.51)	68.3 (0.631)	79.6 (0.001)	76.4 (0.004)

DISCUSSION

The present study states that childhood disease treatment is better in Kumaun compared to Garhwal. Kumaun has high literacy rates than Garhwal, thus affecting the care seeking behavior of people. Several studies have demonstration positive relationship between maternal literacy and care seeking behavior. In the Kumaun division, district Nainital has highest care seeking behavior for childhood diseases followed by Almora. Awareness and high maternal education could be associated with such propitious statistics. [7-8]

Udham Singh Nagar from Kumaun division had the worst care seeking behavior, the proportion of children receiving ORS or Zinc for treatment of diarrhoea was low. Several studies have stated that most of the mothers have no knowledge about ORS and its importance during diarrhoeal bouts. Even if they knew about ORS, most of the women were unaware about proper ORS preparation and proportion that should be consumed. [10,11] Shoddy civic facilities and contaminated drinking water, followed by poor hygiene ranging from not washing hands to consuming unhygienic food can cause ARI. [2] As, mentioned previously that rate of literacy has positive impacts on health awareness amongst people, but Udham Singh Nagar has lowest literacy rates in the division, resulting in poor childcare seeking behavior. [7]

Dehradun and Chamoli district has high proportion of children who receive treatment for childhood diseases. Both the regions have high literacy rates thus, people are more aware and utilize the treatment provided by the Government. [7] Uttarkashi and Tehri-Garhwal districts have a low ratio of who received treatment for childhood

diseases. Several factors attributes to such low stats. First, the main source of water present in the hilly districts are natural springs or public hand pumps, which are at more risk of contamination, resulting in diarrhoeal outbreaks. According to various researches, contaminated drinking water is considered as a third leading cause of diarrhoea amongst kids. [1,12] Second, several rural areas in the district have poor transport and communication facilities posing threats to utilization of medical services. Health centers are far away and require lot of money for transportation even if the fees levied for treatment by government institutions are low. Studies have identified that economic status as the most determining factor for the number of visits to a health care facility. [13] Third, poor rate of literacy has its repercussions on care seeking behavior; Tehri-Garhwal and Uttarkashi both have low rates of literacy. [7]

In addition, a study conducted has identified that exclusive breastfeeding until the age of six, can potentially reduce the risks of diarrhoea and ARI. [14,15] However, in several hilly terrains of Uttarakhand, children are deprived of mother's milk, as mothers go to field for work to earn livelihood. [16]

CONCLUSION

Child health is an important aspect of a healthy nation. Treatment of childhood diseases not only helps in improving child health but also indicates awareness amongst people regarding the health facilities available and provided by the government. This study offers in-depth analysis of distribution of childhood disease treatment across the state and between its districts. This study also highlights areas that require immediate intervention to improve child health.

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