



RESEARCH ARTICLE

ASSESSMENT OF MORBIDITY PROFILE AMONG UNDER FIVE CHILDREN AND TREATMENT SEEKING BEHAVIOR OF THEIR PARENTS IN DISTRICT KANGRA HIMACHAL PRADESH

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ABSTRACT

Background: Morbidity can be defined as the “disease load”. Low morbidity explains that the health status is better and high morbidity shows poor health status. Although low morbidity may occur due to actual lack of disease consciousness and under reporting. Healthcare-seeking behaviour is also of prime importance and is pivotal in the well-being of the individual as well as the community. The process of responding to perceived ‘illness’ or seeking care involves multiple steps. Mother’s decision to seek healthcare is not an off isolated event, but a composite result of her personal needs, social forces, actions of healthcare providers, and the location of services.

Objective: To understand the morbidity profile and health care seeking behavior of parents of children, 0-5 yrs of age in Himachal Pradesh.

Methods: A community based cross-sectional study on 2400 children of age less than and equal to 59 months was conducted. Morbidity profile and socio demographic indicators along with other variables were defined as indicators of health and health care seeking behaviour. The study was conducted using 30 cluster techniques with 80 participants from each cluster of district Kangra.

Results: Respiratory tract infections were the leading cause of morbidity followed by Diarrhoea and Vomiting among study participants. We also found that out of these 58.05 % of the rural participants were belong to Lower middle class family whereas among urban participants 65.03% belonged to upper middle class. Parents of 47.1 % sick participants took their child to health facility.

Conclusion: We came to know that respiratory infections are still the leading cause of morbidity and peripheral health institutions are the most trusted health facilities for seeking health advice. Although private practitioner, specially Ayurveda doctors in rural area plays significant role.

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INTRODUCTION

A major paradox of modern medical system is the ability and resources to provide high quality medical care on an unprecedented scale, yet a substantial proportion of population is unable to receive adequate medical care (Kutty *et al.*, 2003). Morbidity can be defined as the “disease load”. Low morbidity explains that the health status is better and high morbidity shows poor health status. Although low morbidity may occur due to actual lack of disease consciousness and under reporting (Sodani *et al.*, 1998). Children are the backbone of any country because morbidity profile of this age group has a far reaching consequence on the overall development of the country. This age group is very crucial because it is the transitional period when the child is struggling to come into equilibrium with its

ecology. During this period about 40% of physical growth and 80% of mental development occurs (Joshi, 1996). A child deprived of health care during these most impressionable years is deprived of the opportunity of growing into a normal human being and the damage done in the first years could be irreversible through one’s later life (Gupta *et al.*, 2012). Several factors are known to be responsible for causing higher rates of morbidity in children. While many of the factors are related to health care services and their uptake by the population, several other factors are related to the socio cultural status of the society. The major diseases affecting this age group are mostly Acute Diarrheal Diseases, Acute Respiratory Infections, Anemia, Skin Diseases, Ear discharge etc. The attributes that can be associated with these diseases are mostly overcrowding, poor sanitation, lack of basic amenities, lack of awareness about proper child care among parents of these children etc (Srivastva *et al.*, 2012). Nutritional status is one of the most

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important factors in the causation of morbidity in children and also indicate nutritional profile of the entire community. Protein energy malnutrition, which is manifested as decrease in weight for age or height for age or weight for height, is the most widely prevalent form of malnutrition among under five children (Ujwala *et al.*, 2012). Malnutrition among children is often caused by the synergistic effects of inadequate or improper food intake, repeated episodes of infectious disease, and improper care during illness (Khalid *et al.*, 2014). Healthcare-seeking behaviour is also of prime importance and is pivotal in the well-being of the individual as well as the community. The process of responding to perceived 'illness' or seeking care involves multiple steps. Mother's decision to seek healthcare is not an off isolated event, but a composite result of her personal needs, social forces, actions of healthcare providers, and the location of services (Ghosh *et al.*, 2013).

Thus, traditionally, while healthcare-seeking behavior is conceptualized as a 'sequence of remedial actions' taken to rectify 'perceived ill-health,' nowadays a wider perspective on affirmative, health-promoting behaviors are adopted. In patriarchal systems, dominating most of India, compounded with unemployment, illiteracy, and fixed firm cultural beliefs the situation is more ominous (Ghosh *et al.*, 2013). Various studies from developing countries have reported that delay in seeking appropriate care and not seeking any care contributes to the large number of child deaths. Improving families' care seeking behaviour could contribute significantly to reducing child mortality in developing countries. The World Health Organization estimates that seeking prompt and appropriate care could reduce child deaths due to acute respiratory infections by 20%. Information on the health seeking behavior helps the policy makers set strategies to decrease the mortality due to common childhood illnesses (Chandrashekhar T Sreeramareddy 2006). Providing access to health services according to need has become more complex in the context of an increasing role for private providers and, frequently, a more limited role for the public sector. Within Asia, this is perhaps most clearly evident in countries that have made the transition from formerly centralized public administrative structures to more decentralized and market-oriented economies.

Where health systems are characterized by high out-of-pocket payments and a wide range of public and private health care providers, understanding the health-seeking behaviors (HSB) of different communities and population groups is essential if adequate access to services and protection against unaffordable health costs are to be achieved. (Grundey John *et al.*, 2010) Government of India and Himachal Pradesh has also made sincere efforts to improve the overall health of under five children using a multipronged approach under National Health Mission (NHM). The mission document of NHM also highlights this as an important issue (Chandrashekhar T Sreeramareddy *et al.*, 2006). Governments, both at central and state level, collect information, directly or indirectly, about these diseases through various sources like NFHS, DLHS, periodic surveys etc. However, independent studies are also necessary to validate the findings of above sources. There is paucity in literature to assess the morbidity profile among 0-5 yrs of age in Himachal Pradesh. The present study, therefore, was conducted to study the pattern of the morbidity among under five children and also to study treatment seeking behavior of the parents or guardians of these children in Kangra district of Himachal Pradesh.

Review of Literature

According to United Nations International Children's Emergency Fund (UNICEF) Children under five years of age constitute approximately 20% of the country total population (Khalid *et al.*, 2014). A bout half of under five deaths occur in only five countries: India, Nigeria, Democratic Republic of Congo, Pakistan and China. India (22%) and Nigeria (13%) together account for more than one third of all under five deaths (Ghosh *et al.*, 2010) Nine states namely Rajasthan, Uttar Pradesh, Uttrakhand, Bihar, Jharkhand, Orissa, Madhya Pradesh, Chhattisgarh and Assam constitute 70% of infant deaths and 75% of under 5 deaths, which is 59% of the total birth of India according to annual Health Survey bulletin 2010-2011. Uttar Pradesh is leading with under five mortality according to Annual Health Survey 2010-2011 (Chandrashekhar T Sreeramareddy *et al.*, 2006).

Baseline Characteristics

According to census 2011 report, sex ratio for India was reported 940 females per 1000 males, which shows the upward trend as compare to 2001 census report of 933 females per 1000 males. For District Kangra in Himachal Pradesh sex ratio as per 2011 census was reported 1012 and child sex ratio (0-6yrs) was reported 876. Total children 0 to 6 years of age constitutes, 10.90% of the total population of district Kangra (census 2011). A study on prevalence and pattern of childhood morbidity in tribal area of Maharashtra, in the year 2005-06, by V C Giri *et al.*, where they included all the children with age 0-72 months, under Salona Primary Health Centre of Chikhaldara Block in Amaravati District of Maharashtra. Reported that, out of total 2603 children surveyed, 1300 (49.9%) were male and 1303 (50.1%) were female participants (Giri *et al.*, 2008). C K Dolla *et al.*, conducted a study in Patalkot valley, Tamia block of Chindwara district of Madhya Pradesh, where they profiled the morbidity and health of that tribe. They highlighted in their results that, about 66.4% of the respondent were illiterate and only 11.6% passed the primary education. The place of deliveries was at home 100% and 58.6% deliveries conducted by untrained dai as per their study (Dolla *et al.*, 2006). Evaluation of IMNCI Practices in two blocks of district Panchkula, Haryana, Raipur Rani and Kalka by J Venkatachalan *et al.*, in which they reported that, 588 under five cases were interviewed from parents of under five children, out of which 358 (60.9%) were male and 230 (39.1%) were female. About 3.6% of children were in the age of 0-2 months, 24% were in the age of 3-12 months, 22.5% in the age group of 13-24 months, 17.2% belonged to 25-36 months, 17.7% were age group of 37-48 months and 15% were in the age group of 49-60 months respectively (Venkatachalam, 2012). Nilanjana Ghosh *et al.*, who conducted the study in rural community of Darjling district, west Bengal, to study the factors affecting the healthcare -seeking behavior of mothers regarding their children, they reported that, among the 256 study children, 142 males (55.4%) and 114 were females (44.5%). Those who were below 1 year was 44 (17.2%), (Ghosh *et al.*, 2013). R Parita P Patel *et al.*, who did the nutritional and morbidity profile of children aged 2-5 years, in 35 Anganwadis at Urban slum areas of Jamnager in the year 2010, reported that they enrolled 450 children for their study in which, 51.1% were males and 48.9% were females. Regarding age distribution, 40.2% children were of 49-60 months of age group, followed by 34.6% in 37-48 months and 5.11% in 25-36 months age group. Regarding Socio-economic status, 80% children belonged to

class IV and V according to modified B.G. Prasad's classification. 36.6% of children's fathers were educated up to primary level followed by 31.1% up to secondary level. 41.3% of mothers were uneducated and 39.3% were educated up to primary level. Regarding occupation, 74.2% of children's fathers were laborers. 90% of children's mothers were housewives and 9.33% were laborers and a few were doing a job or self-employed (Patel *et al.*, 2013). Morbidity profile of preschool children age 1 to 5 years, from below poverty line families in 16 mohallas in urban and 8 villages in rural area were included in study from Lucknow district of Uttar Pradesh by Khalid Mohammad *et al.*, in the year 2012-13. Total 352 children for study were included, from which 234 were from Urban area and 118 were from rural area. Majority children were from illiterate mothers (44.3%). They also stated that out of total children, 44.0% were female and 56% were males. Majority 36.9% were in the age group of 12-23 months (Khalid *et al.*, 2014).

Nutritional Status

United Nations International Children's Emergency Fund (UNICEF Levels and Trends in child mortality Report 2013) reported that, in India 25 million children under five year are wasted and 61 million are stunted which constitute 3% and 28% of wasted & stunted children respectively in the world. In Tribal area of Madhya Pradesh, a study conducted by, C K Dolla *Et al.*, with aim to profile the morbidity and health of a primitive tribe, reported in their results, the proportion of preschool children with weight deficit (< median-2 SD) was 52.5%. Stunting was reported in 48%, and wasting was in 33.9%. The proportion of children with severe underweight (<-3SD) was reported in 21.4%, severe stunting was in 23.4% and severe wasting was reported in 8.8%. In another study, conducted by R Parita P Patel *et al.*, in the year 2010, in which they wanted to measure the nutritional status, along with burden of malnutrition and factors associated with malnutrition in 2-5 years of age children in urban slums of Jammager city, reported that, according to IAP classification, 49.8 5% children were normal, 30.0% children were in Grade-I malnutrition, 17.6% in grade II and 2.2% in grade III. 48.7% children had stunting, 14.2% children had wasting and 50.2% were undernourished. Malnutrition was more relevant in female children than male children. More than three fourth of female children were in Grade-II and Grade-III of malnutrition. 51.6% of children of illiterate mother were malnourished as compared to 27.3% educated mother. 58.8% children of illiterate father were malnourished as compared to 43.2% of educated father.

Morbidity profile

Saswata Ghosh, analyzed the data drawn from the National Family Health Survey (NFHS-2), with objective to check weather Maternal education matter in gender difference in Treatment-seeking behavior during common childhood illness in India, highlighted that 10.3% of boys and 9.2% of girls out of 30995 survey children had diarrhea with last 15 days of survey. Similarly 10.6% boys and 8.6% girls had ARI episode in last 15 days of survey. Overall boys were suffering 53.4% and 55.3% of diarrhea and ARI respectively. In tribal area of Salon Primary Health centre of Chikhaldara block in Amaravati District of Maharashtra, study conducted by V C Giri *et al.*, in the year 2005-06, where they examined the 2603 children from 0 to 72 months of age, observed that prevalence of morbidity is 34.7%, being higher in boys. Highest

prevalence (47.3%) among boys was observed in the age group 49-60 months. Overall prevalence of morbidity was highest (34.8%) in the age group 37-48 months and was lowest (31.8%) in the age group 0-12 months. Prevalence of ARI was highest (25.5%) followed by ADD (5.8%), Eye problems (1.5%), Skin Infections (1.2%). According to the reports of National Family Health survey (2005-2006), with the help of retrospective two weeks recall period, children under five who were included in the survey, 6% showed symptoms of acute respiratory infections (ARI), 15% had fever and 9% of the children had diarrhea. In the same survey prevalence of ARI for Himachal Pradesh is reported 1.3% which is lowest in India. In Himachal Pradesh according to the data provided on Health and Family welfare department website, for 0 to 4 yrs of age, shows that Diarrhea is the main morbidity, followed by low birth weight, lower respiratory tract infections, other infections, Iron deficiency, dental carries, URI, asthma, Otitis Media and other unintentional injuries (H & FW Govt. of HP 2001).

Treatment seeking behavior

NFHS 3 survey conducted in 2008, reported that, overall treatment was sought from a Health facility or provider for 69% of children with symptoms of ARI and 13% received antibiotics. 8% of children with fever took an anti-malarial drug and 13% took an antibiotic drug. 60% of children with diarrhea were taken to a health facility, 43% received ORS. More than a quarter 26% of children with diarrhea did not receive any treatment. Treatment of diarrhea with any ORT ranges from 81% in Kerala and 70% in Himachal Pradesh to 21% in Rajasthan. Only 10% received more liquid than normal as recommended. Mohammad Khalid *et al.*, conducted a study on morbidity profile of preschool children from below poverty line in Lucknow district revealed in his study that, out of 217 children who had diarrhea, fever, ARI and other illness two weeks preceding the survey, higher proportion (87.6%) were taken to health facilities or health care provider. No care was sought for 12.4% percent children. The private sector was preferred source of care for illness followed by unqualified practioner. Only 26.8% went to government health facility. Mother's main reasons for not seeking care were transport problem/far distance from health facility 57.1%, lack of time 17.9%, and perceived illness was not serious 14.3%. (Khalid *et al.*, 2014). According to Anindo Majumdar *et al.*, who conducted the study among urban and rural field practice areas attached to a medical institution in Pondicherry, in the year 2013, among 270 study participants, who took the treatment, 63% preferred the government sector over private sector in rural areas and private sector over government in urban slums (51.2%). Main reasons for preferring type of consultation were proximity (61.1%) and trust (51.2%) in rural areas and urban slums respectively. 95% of the parents of children with ARI in urban slums were satisfied with the outside consultation whereas 77.8% of the rural parents were satisfied. NFHS 3 survey results highlighted that, poorest people experience lowest health treatments by 55.7%, where as the richest people uses the highest treatment with 78.2%. Women with no education seek the lowest treatment with 60.6% followed by Incomplete Primary (62.0%), complete primary 64.1%, Incomplete Secondary 70%, and Complete Secondary 73.5%. On other hand higher educated mother demonstrated highest treatment seeking with 77.1%. Sikhs take the highest health treatment, secondly Muslim seek treatment of 68.3%, followed by Hindus 64% and Christians 61.1%. Generally, higher caste

receives maximum treatment with 68.0% as compared with SC/ST/OBC. This is accompanied by Other Backward Caste 65.6% and Scheduled Caste 64.1%. Lowest one is recorded by Scheduled Tribes with 53.4%. Male children provided more treatment, 66.6% as compared to female children by 63.4% (Laxmi Kant Prem Prakash 2014). A number of child survival strategies implemented by govt. of India has resulted in impressive improvement in morbidity and mortality indicators but the results have not been consistent. There is a need for community based information on morbidity patterns among under five will be use in assessing the overall impact of improved nutritional and immunization status as a result of various ongoing nutritional improvement and disease control programs as well as in planning resource allocation at the national level.

Aims and Objective

To study morbidity profile of under-five children and treatment seeking behavior of their Parents in District Kangra, Himachal Pradesh.

Methodology

Study Area

This study was carried out in Urban, rural and slum population of district Kangra, located in the state Himachal Pradesh.

Study Population

The study population included children in the age group of 0 to 59 months of age from the selected areas.

Study Design

A community based cross-sectional study.

Study tool

A semi structured questionnaire, which included demographic profile, socio economic status of the family by Uday Pareek Scale for rural area and and kupuswamy scale for Urban area, socio cultural and environmental conditions, Personal Hygiene, Birth history, Immunization status, Sickness history of last 14 days as per NFHS, Treatment seeking behaviour and Feeding habits along with Anthropometric measurements (Height & Weight).

Study Period

The study was carried out for a period of one year from 11st April 2014 to 10th April 2015.

Sample size

Estimated population of under-5 children in district Kangra is about 120000 (Census 2011). Taking margin of error 2%, confidence level 95% and 50% response distribution, sample size came out to be 2354. It was round figured for continence to 2400. The study population of 2400 (2160 from rural areas and 240 from urban) was divided in a proportion of 90% and 10% between rural and urban areas respectively in accordance with the demographic distribution prevalent in Himachal Pradesh.

Sampling technique

In the study 30 Cluster sampling technique, by WHO for Immunization surveillance was use. 2400 study participants were distributed among 30 clusters, which come out to 80 study participants per cluster. District Kangra's population is catered by 440 Health Sub Centres and each sub centre was considered as cluster or primary sampling unit and children from 0 to 59 months of age was secondary sampling unit. For the selection of study population sampling was done in the two phases.

Phase I

In first phase, 440 Health sub centres were firstly divided into 331 rural and 9 urban Health centres. Rural and urban Health Centre was arranged alphabetically and numerical number was allocated to each health sub centre falling in rural and urban area. Among these health sub centres serving rural population, 27 and those serving Urban 3 were selected randomly by using online software for randomization. Medical staff of that concerned area was approached and necessary information as well informed consent was taken.

Phase II

The clusters were mapped and first cluster was picked up randomly by using the lottery system. It was visited and meeting was held with the health sub centre in charge and aanganwari worker for gathering required information like no of villages/ wards served, no of households in these villages/ wards and eligible participants. A empty bottle was twisted in the courtyard of Health Sub centre and the direction pointed by the opening of bottle was chosen to start the study. First house in the direction pointed by the bottle was marked as first starting point of that cluster and then subsequent adjacent houses were visited till the required sample size of 80 participants was completed in that cluster. Respondent was explained about the purpose of study and written permission from Parents / legal guardian / elder more than 18 years of age in the household, was sought. Privacy and confidentiality was well maintained during interview and examination of the study participant. Body weight was measured by the digital weighing scale, which was calibrated and standardized with physical weights issued by the department of Industries Govt. of Himachal Pradesh. Allowable error was up to ± 100 grams. Measurement was recorded in kilograms and rounded off to 100 grams. Body weight of the subjects was measured by standing the child motionless, feet about 15cm apart and weight equally distributed on both the legs on the weighing machine, with minimum outerwear and no footwear. If any child who was not able to stand, his or her respondent was asked to stand on weighing scale, firstly with child in the lap and secondly without child in the lap. Second measurement was deducted from the first measurement and the result was recorded as weight of the child in kilograms. Height was measured in centimetres with stadiometer, heaving range from 25 cm to 205 cm and allowable error ± 0.5 Cm. The measurement was recorded in centimetres and rounded off to 1 Cm. Subjects standing on the platform of stadiometer with minimum outerwear and no footwear, in an erect posture (stand up straight and look straight ahead) against the pole of the stadiometre and with the head positioned so that top of the external auditory meatus is levelled with inferior margin of the bony orbit as well as touching the pole of stadiometer at

occipital bone, at scapula, at buttocks and calf muscles. Headpiece of the stadiometer was brought onto the upper most (superior) point on the head with sufficient pressure to compress the hair. Subjects less than 2 year of age their length was measured by using Infantometer ranging from 40 Cm to 100 Cm, with allowable error of ± 0.5 Cm. If any child was found absent at the time of first visit, that house was visited twice again. During third visit if child is found absent again, he or she was excluded from the study and next eligible study participant from other household in that cluster was taken into the study to complete the sample size of 80 in that cluster. Similar procedure was adopted in the remaining 29 clusters.

Statistical Analysis

Data collected on the variables such as age, gender, Height, Weight, socioeconomic status, Socio-cultural status, Environmental status, Morbidity profile and Treatment seeking behaviours was entered into a pre-structured data entry form on Microsoft Excel sheet and analysed. The data summarised as proportions was compared using chi square test. For comparison of mean age and height in different groups, the unpaired student t test was done. Level of significance was set at the level of 5%.

Ethical Justification

The study did not involve any experimental diagnostic test or administration of medicines. Written informed consent from the entire respondent's of children included in study was obtained before gathering any information. The information collected was kept strictly confidential and individual identity was not disclosed under any circumstances. The study involved no risk or benefit to the patient and involved no financial burden. Results of the study were used for academic purposes and for framing recommendations for the improvement in services and for no other purpose. Those participants who required the consultation at tertiary level were provided with all support at Dr RPGMC Tanda. The study was approved on 10-04-14 vide letter no.HFW-H-DRPGMC/Ethics/2014/17 by scientific Advisory cum protocol Review Committee of Dr. Rajendra Prasad Government Medical College, Kangra at Tanda (H.P).

RESULTS AND OBSERVATIONS

1. Base Line details of study participants:

The study population consisted of 2400 in the age group of 0 to 59 months in 30 clusters of various categories. Rural participants constituted 88.6%, Urban 9.2% and slum both in rural and urban constituted the remaining 2.2% of the total sample size. Male to female participation is almost similar in all settings. Mean age in rural setting is more as compare to others (28.2 ± 17.1). We also observed that 97% of the study participants were permanent resident of Himachal Pradesh. The above Table no 1 shows the age wise distribution of the study participants. Among the rural and the urban children examined, maximum (42.9%; 1030/2400) were between the age of 12-36 months where as in the slum areas 45.3% of the children were between 36-60 months. The age of the study participants who were less than 1 month was taken as completed days of life and those who were more than 1 month were taken as completed months of age on the day of examination. The mean age of the study population was 27.71 months ($SD \pm 17.17$). Minimum age

of the participant was 1 day and maximum was 59 months. (Table 1)

2. Distribution of the study participants according to the Socio-economic status:

As study population was distributed among Rural and Urban population, hence to measure socio-economic status for rural participants Uday Parekh scale and modified Kuppuswamy scale in the urban population were used. Participants from the rural areas, majority 61.6% of the children belonged to the lower middle class families, whereas 36.6% were from the middle class families. 1.0% of the population in rural area belonged to the lower class and only 0.7% belonged to upper middle class. None of the participant was in upper class. Where as in rural slum population 47.1% belonging to lower class family and 44.1% in Lower middle class family only. (Using Uday parekh scale) Among the urban population 77.8% of the children were from upper middle class, followed by lower middle 10.9%, followed by upper class with 10.4%. None was representing the lower class. Whereas in urban slum population, 5.3% were belonging to lower middle and majority (94.7%) belonging to upper lower class. None of the participant in slum area belongs to any other class. (Kuppuswamy scale).

3. Nutritional Classification of the study participants:

It is clear from the table no 3.1, that 63.3% were Normal, 28.2% are stunted, and 6.5% were wasted and 2.1% were both wasted and stunted. Among rural participants 34.1% females were stunted and 7.4% were wasted which are greater in proportion to males. In urban participants also females are more malnourished (42.8%). Among slum participants male and females are almost equally malnourished. Overall females (43.6%) are more malnourished as compare to males (30.4%). We also found that as the socioeconomic status decreases from upper class to lower class among study participants, prevalence malnutrition increases (Correlation coefficient $r = .09$, $P = .000$) (Table 2).

4. Sickness records of the study participants:

We observed that 26.9% of the study participants were reported sick on the day of visit to the study participants and majority (87.2%) were sick within last three days. We also observed that 40.1% of the study participants were found sick in within last two weeks and 9% were never fallen sick till the day of visit. In the Table no 3 discussed in this section, total percentage may not be 100% as one child heaving multiple symptoms is counted under multiple morbidities. Majority (93.7%) were sick from last one week and those who were chronic (sick >1 month) were 1.46% of the total sick participants with in last two weeks. It is clear from the Table no 3, that majority of the participants were suffering from respiratory tract infections. Those heaving fever constituted 45.8%. Around 33% were down with fever, running nose and cough. Diarrhoea was reported among 9% and vomiting was reported by 3.5% of the participants. Those heaving both diarrhoea and vomiting constituted 1.87% of the participants. Skin infections were also reported in 6.7% of the participants. Others constituted 2.2% which are mostly represented by surgical problems like hernia or cysts, congenital problems like mental retardation, Deaf & dumb etc. Out of 87 study participants those heaving diarrhoea, 34.5% were not given oral rehydration solution during diarrhoeal episodes. It's clear that among rural participants,

majority 58.05% belongs to lower middle class. In this class majority were heaving running nose followed by cough and fever. In rural slum as we had limited representation from the participants, running nose (50%) was the main morbidity in lower economic class. Among urban participants majority were in upper middle class, with majority with running nose (90.9%), followed by cough (90.3%) and diarrhoea (64.7%). As the participation from urban slum is limited, but majority were from lower middle class with running nose (29.17%) (Table 3).

5. Treatment seeking behaviour of the parents:

Treatment seeking behaviour of the parent's is described along with specific health facility selection for treatment of their child. We observed that 47.1% visited the health facility for treatment and did not preferred any other measure of treatment, however parents of 62.7% to the sick participants overall visited the health facility. Among rural study participants also health facility was accessed by 47.35% of the study participants, where as among rural-slum study participants, home remedies are the most preferred (81.25%). Among urban study participants majority (50.70%) and among urban slum half (50%) of the parents took their child to health facility for treatment. We also observed that only 1% of the sick study participants were visited at their home by the respective health worker of that area. In the above table no 18.1, it is observed that 47.1% parents visited the health facility, but also 24% were dependent on home remedies. Around 16% did nothing during sickness period. Out of 962 sick participants, 8.3% used allopathic medicines which were already present in their homes. (Table 4) Majority of the study participant in rural population belonged to lower middle class. In this class maximum parents took their children to health facility for treatment followed by home remedies. Limited participation in the rural slum and majority of the patients gave home remedies only. Among urban study participants, majority were represented by upper middle class and majority parents took the treatment from health facility but 1 child's parents also used witch craft for morbidity. As we have only 7 participants from urban slum population almost half took the child to health facility and half gave the home remedies in lower middle class.

6. Type of health facility preferred by the parents:

In our study we observed that, those parents who preferred the health facility for treatment of their sick child, private Ayurvedic practitioner was the first choice for treatment (28.4%), followed by governmental community health centre. In rural area, parents preferred the private Ayurvedic doctors (25.55%) where as in among urban study participants, majority (49.2%) of the parents preferred the government community health centres for treatment. It is clear that out 603 participants who took treatment from any health facility, majority (28.4%), took treatment from private Ayurvedic Doctor, followed by community health centre. A major chunk 13.1% visited Quacks. It also clear that services of the peripheral Govt. health institutions (39.6%) were used by the majority of the participants. (Table 5) Among rural study participants, majority (56.12%) belonged to lower middle class, who preferred the government CHC, followed by Ayurvedic private practitioner. Middle class preferred the private Ayurvedic practitioner in first place. Limited participation from rural slum and 50% preferred the PHC and rest chemist shop. Mostly urban participants were represented by upper middle class and

taking treatment from government community health centre. In the urban slum we had only 4 participants belonging to lower middle class and all took treatment from private ayurvedic practitioner.

B Necessity

As discussed earlier among rural participants, 37.21% belonged to lower middle class and majority took the treatment to prevent further deterioration of the child. In rural slum we have only 2 participants and they took the treatment from specific health facility to prevent the further deterioration. Among the urban participants majority of the study participants belonged to upper middle class and they took their children to any health facility to prevent the deterioration. In the above table Participants from urban slum population took the treatment to prevent the deterioration.

B Prescriber characteristics:

According to prescriber characteristics, we observed that, majority (50.91%) parents of the rural study participants trusted the prescribers for treatment, where as 51.85% parents of urban study participants preferred qualified & experienced health practitioner. Among the rural population almost half of the parents preferred qualified experienced and half of the parents trust the prescriber. In rural slum we had limited participation and all the parents preferred the specific prescriber due to qualification and experience. Among urban participants, 81.48% belonged to upper middle class and almost half the parents preferred qualified & experienced prescriber and half trusted the prescriber. In urban slum all the participants trusted the prescriber.

C Quality of care:

We observed that 80.22% of the parents in rural area preferred the specific health facility due to the better results achieved from treatment from the specific care provided at the specific health facility, where as 57.41% parents of urban study participants also preferred the specific health facility due to better results followed by availability of facilities at that specific health facility (38.89%). Our results also revealed that 6.25% of the CHC are not working 24*7 and 77.28% of the PHC are not working 24*7. We can see that 59.16% are in the lower middle class and 80.22% visited the specific health facility because of better results from the specific health facility. Rural slum has limited participation and they also preferred the specific health facility due to better results from that specific health facility. Among urban participants 57.41% preferred the specific health facility due to better results and 38.89% due to availability of health facilities at particular health facility. Among urban participants all preferred the specific health facility due to availability of services.

D Other motivations:

We observed that, 82% of the parents of the rural study participants preferred specific health facility for their convince, which is almost similar among parents of urban participants (81.48%). It is clear that 82% of the parents preferred the specific health facility because of convenience to them. In rural population 50% preferred due to convenience and 50% due to low cost. Among urban participants majority 81.48% preferred the specific health facility due to their convenience and rest due to low cost. Among rural slum participants 100% preferred the specific health facility due to low cost.

Table 1. Distribution of the study participants according to the age groups

Age (Months)	Rural N (%)	Urban N (%)	Slum N (%)	Total N (%)
<1	41 (1.7)	12 (5.4)	1 (1.9)	56 (2.3)
1 to 12	494 (23.2)	73 (33.0)	8 (15.1)	575 (24.0)
12 to <36	916 (43.1)	94 (43.5)	20 (37.7)	1030(42.9)
36 to <60	673 (31.7)	42 (19.0)	24 (45.3)	739 (30.8)
Total N (%)	2126 (88.58)	221(9.21)	53 (2.21)	2400(100)

Table 2. Distribution of Nutritional status of study participants according to Waterlow's classification

Place of Residence	Sex	Nutritional Status				Total N (%)	Chi Square (P value)
		Normal	Stunted	Wasted	Wasted & Stunted		
Rural	Male	767 N (%) (69.3)	264 (23.8)	59 (5.3)	17 (1.5)	1107(52.1)	39.53 (.000)
	Female	572 N (%) (56.1)	347 (34.1)	75 (7.4)	25 (2.5)	1019(47.9)	
	Total	1139 (63)	611 (28.7)	134(6.3)	42 (2)	2126(88.53)	
Urban	Male	86 (72.9)	22(18.6)	9 (7.6)	1 (0.8)	118(53.4)	7.73 (.05)
	Female	59 (57.3)	29 (28.2)	10(9.7)	5 (4.9)	103(46.61)	
	Total	145 N (%) (65.6)	51 (23.1)	19 (8.6)	6(2.7)	221(9.21)	
Slum	Male N (%)	15(65.2)	6(26.1)	1(4.3)	1(4.3)	23(43.4)	0.168 (.983)
	Female N (%)	19 (63.3)	8 (26.7)	2(6.7)	1 (3.3)	30(56.6)	
	Total N (%)	34 (64.2)	14 (26.4)	3 (5.7)	2 (3.8)	53 (2.21)	
Total	Male	868 N (%) (69.6)	292 (23.4)	69 (5.5)	19(1.5)	1248((52)	
	Female	650 N (%) (56.4)	384 (33.3)	87 (7.6)	31 (2.7)	1152(48)	
	Total	1518 N (%) (63.3)	676 (28.2)	156 (6.5)	50 (2.1)	2400 (100)	

Table 3. Distribution of sickness profile in last two weeks

Sickness Profile	Number	Percent% (N=2400)
Running nose	591	61.4
Cough	479	49.8
Fever	441	45.8
Fever and Cold and Cough	319	33.16
Diarrhoea	87	9.0
Skin Diseases	64	6.7
Lethargic	55	5.7
Vomiting	34	3.5
ARI	29	3.0
Pain in abdomen	31	3.2
Injury	22	2.3
Others	21	2.2
ENT Diseases	20	2.1
Constipation	19	2.0
LM and vomiting	18	1.87
Eye Diseases	11	1.1
UTI	6	0.6
Worms	3	0.3
Jaundice	2	0.2
Inability to feed	2	0.2
Convulsions	2	0.2
Dysentery	2	0.2
Total	962	

Table 4. Distribution of Treatment seeking behaviour of the sick child's parents

	Number	Percent%
Took child to Health Facility	453	47.1
Only Home remedies	231	24
Did Nothing	149	15.5
Gave allopathic medicines at home without Consultation	80	8.3
Took child to Health facility and also gave home Remedies	40	4.2
Allopathic medicines and home remedies without Consultation	4	0.4
Other than allopathic medicines	3	0.3
Took the child to Health facility and Allopathic medicine at home	1	0.1
Witch Craft	1	0.1
Total	962	100

Table 5. Distribution of health facility service preferred during sickness period

Type of Health Facility	Number	Percent%
Private Ayurvedic practioner	171	28.4
Govt. CHC	164	27.2
Quack	79	13.1
Govt. Primary Health Centre	50	8.3
Private Paediatrician	31	5.1
Chemist shop	30	5.0
Govt. Sub Health Centre	25	4.1
Govt. Civil Hospital	20	3.3
Private MBBS	12	2.0
Govt. Ayurvedic Dispensary	12	2.0
Govt. Medical College	3	0.5
Aaganwari	3	0.5
Private homeopathic	3	0.5
Total	603	100

DISCUSSION

Base Line Data

In our study 88.6% participants were from rural area, 9.2% from urban and remaining 2.2% were from rural and urban slum areas. There were 52% male and 48% female participants in our study. In a similar study conducted by V C Giri *et al*, in tribal area of Maharashtra, in the year 2006, the male participation was 49.9%, where as females participation was 50.1%. As per the study done by Venkatachalam J *et al*, in the year 2010, at Panchkula, there were 60.9% male and 39.1% female participants, which showed the difference between male female participation, whereas in our study its almost similar. In the year 2011, another study by Srivastva DK *et al*, in Etawah district of Uttar Pradesh, male participation was 52.91% and females were 47.09%, where as in our study male participation was (48%). From these studies conducted in India and other countries it is observed that male participation is slightly high as compared to female participation which is observed in our study also. As per census 2011, child sex ratio (0-6 yrs), was reported 919 for India, where as for district Kangra it was 876. Our study also revealed that majority (42.9%) of the participants were between 12 to < 36 months of age. In NFHS 2 as per Saswata Gosh, 37.9% of participants were in the age group 12 to 23 months of age. In 2011, another study conducted by Srivastava D K *et al*, in Etawah district of Uttar Pradesh, revealed that 28.83% of the total participants were in the age group of 2 to 3 years. Although various studies have presented with different age groups but majority of the

participants were in the age group 2 to 3 years of age. This can be explained by our observations that that majority of children above 3 years of age were off to play/pre school during our visits.

Nutritional Status

In our study we measured the weight and height of the study participants and categorized the nutritional status according to Waterlow's classification³³ and we observed that, 63.3% of the study participants were normal, 28.2% of the study participants were stunted, 6.5% were wasted and 2.1% were stunted & wasted. In rural area malnourishment was found statistically significant ($p=0.001$) as compare to urban and slum participants. As per the study of C K Dolla *et al*, in the year 2000, the proportion of preschool children with weight deficit (<median-2 S.D) was 52.5%. Stunting was 48% which is very high as compared to our study (28.1%), and wasting was 33.95% which is also high in this study as compare to our study (6.5%). In the year 2011, another study by Srivastva DK *et al*, 17.9% of male and 20.1% female were stunted, where as in our study 23.4% of male and 33.3% of female participants were stunted.

Morbidity Profile

Our study, prevalence of diarrhea 9%, which is more than double as compare to DLHS 4 (3.7%) and less as compare to DLHS 3 (16.7%) for district Kangra. Those who were suffering from diarrhea 70% received ORS according to DLHS 4 and 75% according to DLHS 3, whereas in our study 65.5%

received the ORS. Study conducted by Chandrashekhar T Sreeramareddy *et al*, in year 2005 in Western Nepal showed that 17.7% children had one or more symptoms during the preceding 15 days which is very less as compare to our study (40.1%). The most common symptoms reported were fever among 186 (36.7%) children, cough among 143 (28.3%) children, running nose among 74 (14.6%) children and diarrhea among 72 (14.2%) children. In a study done by Ujwala U Ukey *et al*, total number of pre- school children in the age group 0-5 years was 353. Morbidity was observed in 146 children (41.4%) which is almost similar to our results (40.1%). Respiratory tract infections dominated with 36% which were less as compare to our study (44.2%). In their study they also reported infections of GIT among 28.1% and Skin Infections was reported in 10.3%, where as in our study 6.7% reported skin infections. ENT and eye infections were 6.8% which were higher as compare to our study 2.1% and 1.1%. Our study revealed the prevalence ARI 3%, whereas DLHS 4 reported the prevalence of 3.3% and DLHS 3, 10.7% for district Kangra. Our study also highlighted the prevalence of other major conditions almost similar to the above discussed studies. The above discussed prevalence of various conditions may be high or low compare to other studies which may be due to our operational definitions, different study settings or due to various reasons related to agent, host or environment which needs further research.

Treatment Seeking Behavior

Our study revealed that 47.1% took the child to a Health facility for consultation, 24% used home remedies, 15.5% did not visited any Health facility, 8.3% gave allopathic medicines which were present at home, without consultation. 4.2% who gave home remedies also visited any health facility, 0.4% gave allopathic medicines and home remedies at home without consultation, 0.3% gave other than allopathic medicines, 0.1% gave allopathic medicines at home and later on took the child to health facility for consultation. As per Chandrashekhar T Sreeramareddy *et al*, who conducted the study in the year 2005, out of the 292 children who had one or more symptoms, 258 (88.4%) received some kind of care outside the home which is much higher as compare to our study(47.1%). No care was sought for 8 (2.7%), whereas in our study no care was sought for (15.5%) children whereas 26 (8.9%) children received traditional/ home remedies as compare to our 24% those received home remedies. Pharmacy was the most common facility where care was sought in 135 (46.2%) episodes of illness which is high as compare to our results (5%) and care was sought from qualified allopathic medical practitioners in 77 (26.4%) episodes which is almost similar to our results (27.2%). 204(69.8%) out of 292 mothers who sought care during childhood illness reported that the reason for seeking care was 'thought that child's illness was serious' where as in our study just 3.7% of the parents thought illness is serious. Reasons given by the mothers for not going to a qualified medical practitioner were: 'thought the illness was not serious' (12.6%), 'pharmacy was nearby' (7.4%), 'no money to see a doctor so went to pharmacy' (6.5%). Sixty-five out of 77(84.4%) mothers who sought care from allopathic practitioners at various health facilities reported that they thought the child's illness to be serious. Our study revealed that 83.7% respondent went to any health facility to prevent further deterioration of the child. Majority of the respondents (51.2%) trusted the prescriber, 77.1% for better results from a specific prescriber and mostly (81.6%) selected the specific health facility for their convenience. According to Khalid *et al*,

who conducted the study in the year 2012-13, out of 217 children who had diarrhea, fever, ARI and other illnesses two weeks preceding the survey, higher proportion (87.6%) were taken to health facilities or health care provider. No care was sought for 12.4% children. The private sector was preferred source of care for illnesses followed by unqualified practitioner. Only 26.8 percent went to government health facility where as in our study overall government health facilities were the most preferred health institutions for treatment. As per mothers main reasons for not seeking care were transport problem, far distance from health facility (57.1%), lack of time (17.9%), and perceived illness was not serious (14.3%). According to Khalid *et al*. Only 50.7% of the children suffering from diarrhea were given oral rehydration therapy which was almost similar to our results (57.7%). Most common fluid used for ORT was ORS. In our study it has been observed that in Government setup, peripheral health institutions like CHC (27.2%) are most dependent health institutions for seeking care. In private sector, Ayurvedic doctors (28.4%) are most preferred for treatment. These results are similar to the various studies which are discussed above. Various explanations were given by the parents for visiting specific health facilities like to prevent deterioration (83.7%), trust in the prescriber (51.2%), experienced & qualified (48.8%), for better results (77.1%) and for their convince (81.6%) are the few responses among all. Our study also revealed that 22.72% of the Primary Health centres are functioning 24×7, where as per the DLHS 4, they are only 16.7% and as per the our study 6.25% of the CHC are not functioning 24×7. In our study overall 62.7% of the sick children were taken to various health facilities for treatment. We also observed that 54.8% of the study participants were sick with in last 3 days and it is well documented in literature that there are many barriers for not seeking care at appropriate time. These barriers can be due to prior knowledge about the morbidity or due to socioeconomic status or due to socio-cultural or socio-environment etc. Further study is required to address these conditions.

Recommendation

- Malnourished children, should be clubbed with online mother and child tracking system (MCTS), which is already in place.
- Operational research should be carried out to find out the external and internal causes of malnutrition in Himachal Pradesh.
- Parents should be made aware regarding the signs, symptoms and immediate steps which can be taken at home of ARI, which is the leading cause of morbidity.
- IMNCI guidelines are in place but need to be practiced at peripheral level by the primary care providers.
- Oral Rehydration Therapy, which is important to prevent diarrhea related death, requires more awareness among parents.
- Governmental health facilities are required to be strengthened for quality services as these are the preferred institutions for treatment by parents.
- Health care providers, posted in health sub centers should visit the sick child and address the issues of the parents.

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