

Profile of Pediatric Admission in Karnali Academy of Health Sciences (KAHS), Jumla

Kayastha N

Lecturer, Department of Pediatrics, Karnali Academy of Health Sciences, Jumla.

Correspondence: Dr. Nirajana Kayastha

Email: nirajanakayastha@gmail.com

Introduction: The knowledge of morbidity as well as mortality pattern of hospital admission is important to understand the prevalent disease trends and magnitude of health problems for future health care planning and implementing interventional strategies for improving the present health services.

Objective: To determine the disease pattern and their outcome among the pediatric admission.

Methodology: This retrospective study was conducted analysing all the pediatric cases who were admitted in Pediatrics department of Karnali Academy of Health Sciences (KAHS), Jumla over a period of one year from January 2016 to December 2016. All the admitted cases were analysed for age group, gender, geographical distribution, disease according to organ system and their outcome.

Results: Among 482 admitted cases, there were 328 (68%) male and 154 (32%) female children and 370 (76.7%) children were under 5 years of age. Of the total cases, majority presented with respiratory diseases (37%) followed by infectious diseases (20.7%) and gastrointestinal diseases (19.5%). The main diseases observed were pneumonia (29%) and acute gastroenteritis (17.4%). Mortality was 0.4%.

Conclusion: The majority of pediatrics morbidity is accounted by respiratory, infectious diseases and gastrointestinal diseases. Most of the pediatrics admission were under five age group which is the most vulnerable period for morbidities and mortality hence the implementation of various health promotion and protection strategies and policies targeted towards this age group should be strengthened and continued.

Key words: Morbidity, mortality, admission

Introduction

The knowledge of prevalence of diseases and their morbidity and mortality pattern is important to know the burden of diseases in the community and to provide an opportunity for planning intervention and strategies for their prevention and management which will improve quality of life and health care which are important elements for the attainment of Sustainable Development Goal (SDG) 3 – Good health and wellbeing.

Infant and child mortality reflect country's socioeconomic situation and quality of life. Nepal Demographic Health Survey (NDHS) 2016 reports

current under five mortality to be 39 per 1000 live births in our country. Eighty two percent of all the deaths among under five aged children occur during infancy with 54% of the deaths within the first month of life in Nepal.¹ According to SDG, all countries should aim to reduce neonatal mortality to at least as low as 12 per 1000 live births and under 5 mortality to at least 25 per 1000 live births by the year 2030.

Karnali Academy of Health Sciences (KAHS) was established in 2011 AD with for an aim to provide health services to the remote and backward areas of Nepal. It is situated in Jumla. Hospital based services

are provided to patients from Jumla and neighboring districts as Dolpa, Kalikot and Mugu. Though there is literature concerning pediatrics admission in various parts of our country, there is not much data concerning it from these remote, rural areas. Analysis of admission, clinical profile and mortality in this hospital will give an insight into pediatric health problems and services provided to the patients in this region.

Method

This was a retrospective study conducted in Pediatrics ward of Karnali Academy of Health Sciences, Jumla. All the inpatient records of admitted children in the department of Pediatrics from January 2016 till December 2016 were retrieved and analysed. The details of each patient were taken from inpatient record. The data included age, gender, address, and diagnosis, duration of hospitalization and outcome of treatment. Monthly variation of the admission pattern was noted. Diagnosis of patients was categorized according to the system involved. Data was entered and statistical analysis carried out using SPSS.

Result

A total of 482 patients were admitted during the study period out of which 328 (68%) were male and 154 (32%) were female as shown in figure 1.

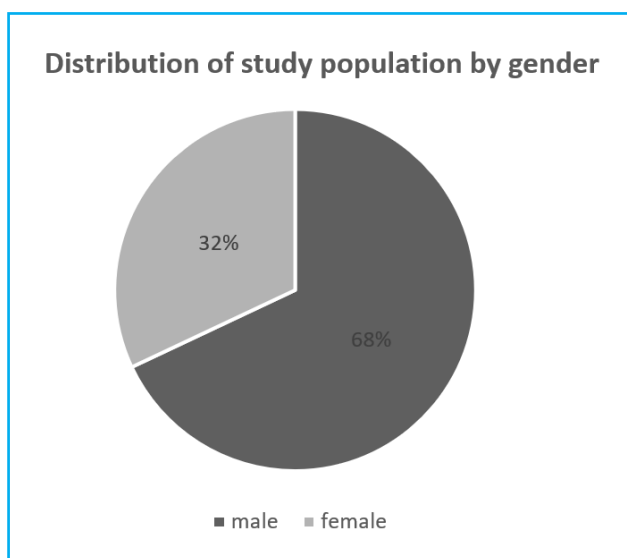


Figure 1: Distribution of study population by gender

The study population was categorized into three age groups: less than 1 year, 1 to 5 years and 5 to 14 years. About 44% of the admitted pediatric cases were infants as shown in figure 2.

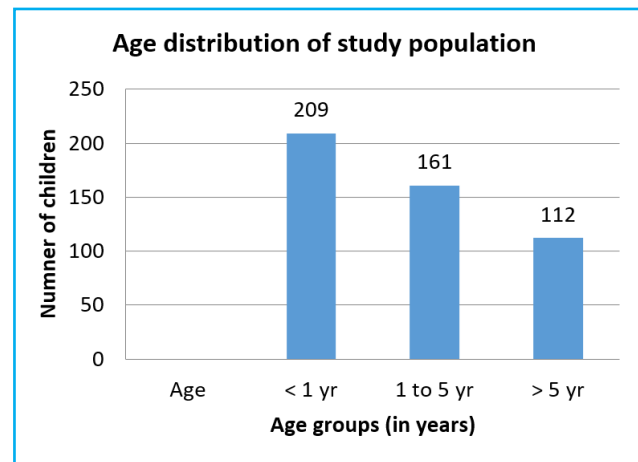


Figure 2: Age distribution of study population

As depicted in Figure 3, almost of the two third of the cases belonged to Jumla followed by Kalikot, Mugu and Dolpa. Despite of road accessibility, it takes hours to days for the patients to reach the main road from their villages and reach the hospital and some make their journey by foot itself.

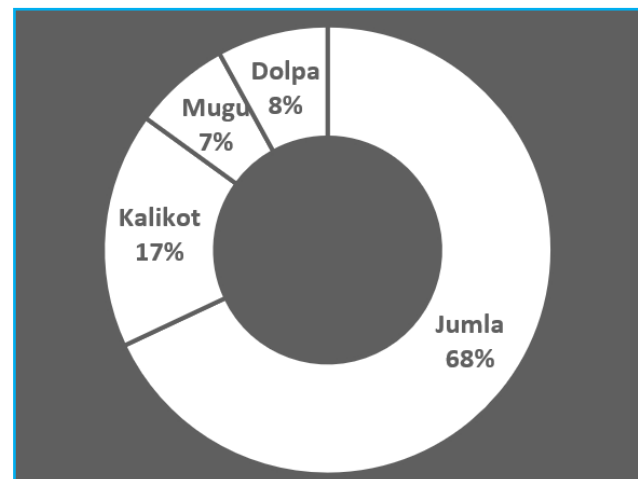


Figure 3: Distribution of study population by residence

Figure 4 shows of the total cases, majority presented with respiratory diseases (37%) followed by infectious diseases (20.7%) and gastrointestinal diseases (19.5%). Pneumonia was most common respiratory disease diagnosed in 138 (76.6%) cases followed by bronchiolitis in 40 (23%) cases. Enteric fever was the most common among infectious diseases accounting for 58 (58%) cases followed by undifferentiated febrile

illness in 30 (30%) cases and acute viral hepatitis in 6 (6%) cases. Gastrointestinal diseases involved 94 (19.5%) cases among which acute gastroenteritis accounted for 84 (90 %) of the total GI cases. Renal system accounted for 35 (7%) cases out of which there were 20 (57%) cases of nephritic syndrome, 8 (23%) cases of urinary tract infection and 7 (20%) cases of nephrotic syndrome. Seizure disorder comprised of 18 (60%) of the CNS cases followed by meningitis in 10 (34%) cases and cerebral palsy in 2 (6%) cases. There were 15 (3%) cases of cardiovascular diseases; 10 (67%) and 5 (33%) cases presented with congenital heart disease and rheumatic heart disease respectively.

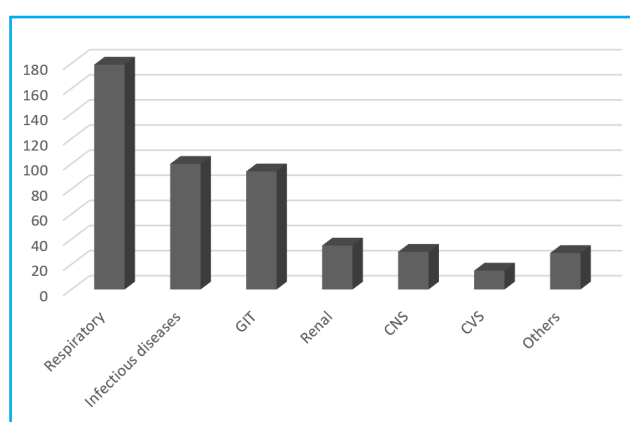


Figure 4: Distribution of study population by systemwise involvement of diseases

Regarding the duration of hospitalization, 37 (8%) cases were admitted for less than 3 days, 254 (53%) for 3 to 5 days and 191 (39%) cases for more than 5 days as shown in table 1.

Table 1: Distribution of study population by duration of hospital stay

Duration of hospital stay	Number of patients	Percentage (%)
< 3 days	37	8
3 to 5 days	254	53
>5 days	191	39
Total	482	100

As shown in figure 5, evaluation of monthly pattern of admission shows the maximum number of admission during the month of June to August and the minimum during the month of January and December.

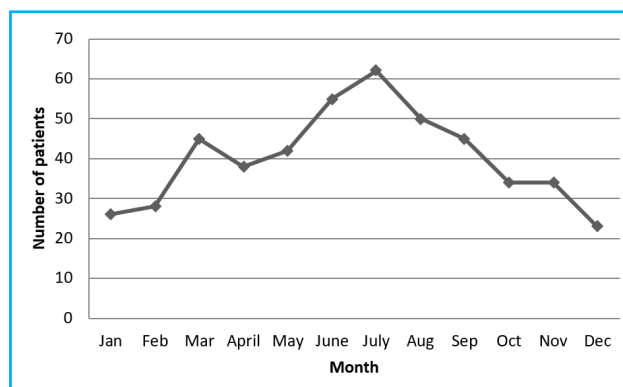


Figure 5: Monthly admission pattern of study population

Table 2 shows the outcome of the admitted cases; 437 (90.6%) cases were discharged, 23 (4.8%) left against medical advice (LAMA), 20 (4.2%) referred and 2 (0.4%) cases expired.

Table 2: Outcome of study population

Outcome	Number of patients	Percentage
Discharged	437	90.6
LAMA	23	4.8
Referred	20	4.2
Mortality	2	0.4
Total	482	100

Discussion

In our present study, among 482 admitted cases there were 328 (68%) male and 154 (32%) were female. Male: female ratio was 2.1:1. Similar pattern of male dominance was found in studies conducted both inside and outside our country. In studies done by Upadhyay et al in Nepal Medical College, Kathmandu and Adhikari et al in Nepalgunj Medical College, Nepalgunj, male children accounted for 59% and 63.6% of the total pediatric admission respectively.^{2,3} Similar pattern of male dominance was observed in studies conducted by Eck et al in West Indies and Shahab et al in Pakistan.^{4,5} Male child is given more priority than female child in developing countries as ours due to which there might be gender disparity in health seeking attitude showing the pattern of male predominance in the present study.

The study group of less than one year of age included 209 (43.3%) cases, 1 to 5 years of age 161 (33.4%) cases and more than 5 years 112 (23.3%) cases. Hence, majority of pediatric admissions were below 5 years of age which is comparable to studies conducted by Gupta et al in Bharatpur and Muluneh et al in India.⁶ The majority of admission in under five age group in various studies reflects this period to be the most vulnerable for childhood morbidity and mortality for which a lot of strategies and policies are implemented at global as well as national level targeting this age group. Residence wise, most of the patients were from Jumla (68%) followed by Kalikot (17%), Dolpa (8%) and Mugu (7%).

In this study, respiratory (37%), infectious diseases (20.7%) and gastrointestinal diseases (19.5%) were the most commonly diagnosed morbidities requiring admission. The main diseases observed were pneumonia (29%), acute gastroenteritis (17.4%), enteric fever (12%), bronchiolitis (9%) and undifferentiated febrile illness (7%). Respiratory disorders dominated in admissions in other studies too. In studies done by Shahab et al in Pakistan Muluneh et al in Ethiopia and Hasan et al in Bangladesh, respiratory illness accounted for majority of the admissions; 38.6%, 22.8% and 32% respectively.^{5,7,8} Nepal annual report estimated new cases of pneumonia registered for treatment under IMNCI to be about 26.4% in the fiscal year 2071/72.⁹ According to WHO, worldwide pneumonia is still the leading cause of under-five mortality accounting for 13% of the under-five mortality in 2015.¹⁰ Following pneumonia, acute gastroenteritis was the most common childhood morbidity in this study. This disease morbidity pattern is comparable to other studies conducted within our country but is higher comparable to studies conducted outside Nepal. In a hospital based retrospective study conducted by Saad et al in Nigeria, acute gastroenteritis accounted for 5.8% of the total admission.¹¹ Similar observation was made by Muluneh et al in Ethiopia where acute gastroenteritis accounted for 3.8% of the admitted cases.⁸ Due to high burden of diarrheal diseases in developing countries as ours these have been included under CB-IMNCI program.

Regarding the duration of hospital stay, most of the cases i.e. 254 (53%) was admitted for 3 to 5 days. Similar findings were observed in studies conducted by Upadhyay et al and Gupta ET al.^{2, 6} Patients with sepsis, meningitis, nephritic and nephrotic syndrome had longer duration of hospital stay.

Most admissions were during the month of June to August which may be due to increased seasonal variation in the incidence of respiratory and diarrheal diseases during this period a finding similar to that reported by Gupta et al and Paudel et al.^{6, 12}

Of the total 482 admitted cases, 437 (90.6%) were discharged, 23 (4.8%) left against medical advice, 20 were referred (4.2%) and 2 (0.4%) cases expired with overall mortality rate of 0.4%. Most of the cases were referred for the need of intensive care management. Two cases died of septic shock and meningitis; both being below 5 years of age.

Conclusion

This study imparts an overview of pattern of pediatric admissions with associated morbidities and mortality. Respiratory and gastrointestinal diseases contribute the major burden of pediatrics admission which closely correlates to other literatures within our country; most of these being preventable and treatable ones. One of the important interventions targeting this high burden of respiratory diseases would be the improvement of vaccination status of children of this region. Annual report- Mid Western Health Directorate 2071/72 reports that among districts categorized based on vaccine access and utilization, Jumla falls under category 3 (low coverage <80%, low drop out <10%) and Mugu under category 4 (low coverage <80%, high dropout >10%).¹³ Other ongoing strategic interventions included in CBIMNCI against these diseases should be well supported. Community awareness on importance of exclusive breastfeeding, proper nutrition, discouraging parenteral smoking, importance of sanitation, safe drinking water and importance of early treatment seeking behavior for any disease should be continued with joint collaboration of local authorities, school, various government and non-government agencies.

The need for the establishment of intensive care facility is needed to lower the referral trend as well as mortality. Referral adds up to the medical cost of patients from this region majority of who belong to lower socioeconomic status.

Reference

1. Nepal Demographic and Health Survey. Ministry of health. Early Childhood mortality:p. 20
2. Upadhyay S, Sharma A, Rijal P, Shrestha S. Review of pediatrics inpatient at Nepal Medical College and Teaching hospital. J. Nepal Paediatr. Soc. 2011; 31(1):25-29.
3. Adhikari J, Belbase M, Bahl L. Demographic profile and childhood morbidity pattern in western Nepal. Journal of Nepalgunj Medical College 2014; 12(2):20-13.
4. Eck C, Pierre RB, Hambleton IR. Medical Pediatric admission Patterns at the University Hospital of the West Indies: Issue for future planning West Indian Med J 2006; 55:223-232.
5. Shahab N, Munir S, Bhatti N. Analysis of pediatric medical admission pattern to a Tertiary Care Hospital: Issues for future planning. Ann. Pak. Inst. Med. Sci 2010; 6(4):219-22.
6. Gupta et al. Pattern of Pediatric Admissions in a Tertiary Care Hospital of Central Nepal. JNMA 2015; 53(2):118-122.
7. Muluneh D, Shimelis D, Benti D. Analysis of admissions to the pediatric emergency ward of Tikur Anbessa Hospital in Addis Ababa, Ethiopia. J. Health Dev 2007; 21(1):48-52.
8. Hasan et al. Disease profile and death pattern among children admitted in a medical college hospital. Bangladesh J child health 2012; 36(2):66-70.
9. Child health: CB-IMNCI. DOHS, Annual report 2071/72. p. 61-63.
10. Causes of child mortality. www.who.int/gho/child-health/mortality/causes.
11. Saad et al. Morbidity and mortality of childhood illnesses at the emergency pediatric unit of a tertiary hospital, north eastern Nigeria. Sahel med Journal 2014; 18(1):1-3.
12. Paudel KM, Sharma S. Review of Paediatrics Inpatient at a Zonal Hospital. J. Nepal Paediatr. Soc. 2012; 32(3):239-44.
13. Child health program:National Immunization Program. Annual report Mid-Western Regional Health Directorate. P.7- 12.