

# Clinico-Demographic Profile of Children Attending Pediatric Outpatient Department in Tertiary Care Center in Gandaki Province, Nepal: A Prospective, Descriptive Cross-Sectional Study

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## Abstract:-

### ➤ Introduction:

Pediatric outpatient departments (OPDs) in tertiary care centers provide a vital connection for the early diagnosis and treatment of childhood illnesses. Understanding the clinico-demographic profile of pediatric patients attending these centers provides insight into the healthcare needs and challenges faced by children in specific regions. This study aimed to evaluate the clinico-demographic characteristics of children attending the pediatric OPD.

### ➤ Methods:

A prospective, descriptive cross-sectional study was conducted from April 12 to December 17, 2023 at pediatric OPD at GP Koirala National Centre for Respiratory Diseases and Hospital, Tanahun, Gandaki Province, Nepal. Data were collected from the pediatric OPD during clinical history taking and examination, including 7,020 children aged 0–14 years. Verbal consent was obtained from legal guardians for using clinical history and diagnostic data. Data on age, sex, socioeconomic status, parental education, and disease distribution were analyzed using SPSS version 23.

### ➤ Results:

Out of 7,020 children, 42.89% were aged 1–5 years, and 28.67% were aged 6–10 years. Males (50.7%) slightly outnumbered females (49.3%). Socioeconomic analysis showed that 57.3% of children were from low-income families. Regarding parental (either father or mother or

any legal guardian who brought child at hospital OPD) education, 31.19% had secondary education, and 28.3% had primary education. Respiratory infections (19.97%) were the most common diagnosis, followed by gastroenteritis (11%), pain abdomen (9%), and malnutrition, especially undernutrition (8%). Other notable conditions included enteric fever (7.4%) and acute conjunctivitis (7.3%).

### ➤ Conclusion:

The study highlights a high prevalence of respiratory and gastrointestinal conditions among children, particularly from low-income families. The findings emphasize the need for targeted healthcare interventions and improved parental education to reduce the burden of childhood illnesses in Gandaki Province.

**Keywords:-** Childhood Illnesses, Clinico-Demographic Profile, Gastroenteritis, Respiratory Infections, Parental Education, Pediatric OPD.

## I. INTRODUCTION

Child health is a critical determinant of a nation's future, with pediatric outpatient departments (OPDs) playing a pivotal role in ensuring timely diagnosis and management of common and complex diseases <sup>1</sup>. In low- and middle-income countries, including Nepal, understanding the demographic and clinical patterns of pediatric patients is essential for optimizing healthcare resources and improving public health outcomes <sup>2</sup>. Gandaki Province, like many regions in Nepal, experiences a diverse range of childhood illnesses, often

exacerbated by socioeconomic factors, limited healthcare access, and varying levels of parental education <sup>3</sup>.

This study, conducted at GP Koirala National Centre for Respiratory Diseases and Hospital in Tanahun, aims to provide a comprehensive overview of the clinico-demographic profile of children attending the pediatric OPD. By capturing data on age, sex, socioeconomic status, parental education, and disease prevalence, this study aims to identify the most pressing health concerns among children in the region. The findings not only highlight the burden of common diseases such as respiratory infections and gastroenteritis but also underscore the impact of social determinants of health on pediatric care <sup>4</sup>.

Since the large population of pediatric patients(7,020) taken, this research provides valuable insights into the healthcare needs of children in Gandaki Province, offering a foundation for targeted interventions and resource allocation in the region's healthcare system <sup>5</sup>.

## II. METHODS

This study employed a prospective, descriptive cross-sectional design to assess the clinico-demographic profile of pediatric patients attending the outpatient department (OPD) at GP Koirala National Centre for Respiratory Diseases and Hospital, Tanahun, Gandaki Province, Nepal. The study was conducted over an eight-month period, from April 12, 2023, to December 17, 2023, encompassing a total of 7,020 children aged 0-14 years.

### ➤ Sample Size

The study included all pediatric patients who attended the OPD during the specified period, providing a comprehensive sample size of 7,020 children.

### ➤ Data Collection

Data were collected from the hospital's existing pediatric OPD records, with verbal consent obtained from legal guardians to utilize the recorded clinical history and diagnostic findings. The data were anonymized and de-identified to ensure confidentiality. Relevant information such as age, sex, socioeconomic status, parental education level, and clinical diagnosis were systematically recorded.

### ➤ Study Variables

The key variables assessed in this study included:

- **Demographic Data:** Age, sex, and socioeconomic status of children.
- **Parental Education:** Level of formal education of the children's guardians/parents, categorized as no formal education, primary, secondary, or higher education.
- **Disease Profile:** Clinical diagnoses made during the OPD visits, including respiratory infections, gastroenteritis, asthma, malnutrition, pain abdomen, enteric fever, allergic conditions, and other prevalent illnesses.

### ➤ Ethical Considerations

Ethical approval for the study was obtained from the Institutional Review Committee (IRC) of GP Koirala National Centre for Respiratory Diseases and Hospital, Tanahun, Gandaki, Nepal on 2023/04/11 (reference number 170). Verbal consent was acquired from the legal guardians of the children. The study adhered to the ethical standards of patient confidentiality and data protection, ensuring compliance with guidelines for research involving human subjects.

### ➤ Data Analysis

Descriptive statistics were used to summarize the data, with frequency and percentage distributions presented for categorical variables such as age, sex, socioeconomic status, and disease distribution. The data were organized and analyzed using SPSS version 23 to ensure accuracy in reporting findings.

## III. RESULTS

The table 1 presents the age distribution of 7,020 children attending a pediatric OPD. The majority (42.89%) belong to the 1–5 years age group, followed by 28.67% in the 6–10 years range. Children aged 11–14 years constitute 15.81%, while infants (0–1 years) make up 12.63%. This distribution highlights the higher pediatric healthcare utilization among younger children, particularly those aged 1–5 years, reflecting common early childhood illnesses and routine checkups in this age group.

Table 1 Age Distribution of Children Attending Pediatric OPD (0–14 years)

Age Group (Years)	Total (Number)	Total (%)
0–1	887	12.63%
1–5	3,010	42.89%
6–10	2,013	28.67%
11–14	1,110	15.81%

The table 2 shows a nearly equal sex distribution among children attending the pediatric OPD, with 50.7% males and 49.3% females, indicating balanced healthcare utilization between both genders.

Table 2 Sex Distribution of Children Attending Pediatric OPD (0–14 years)

Sex	Number	Percentage (%)
Male	3,563	50.7
Female	3,457	49.3
<b>Total</b>	<b>7,020</b>	<b>100%</b>

The table 3 illustrates the age and sex distribution of 7,020 children attending a pediatric OPD. Most children (42.89%) belong to the 1–5 years age group, followed by 28.67% in the 6–10 years group. Males slightly outnumber females in the younger age groups (51.6% in 1–5 years),

while females are marginally higher in the 11–14 years group (50.9%). Overall, there is a near-equal distribution of males (50.7%) and females (49.3%), reflecting balanced healthcare access.

Table 3 Age and Sex Distribution of Children Attending Pediatric OPD (0–14 years)

Age Group(Years)	Total (Number)	Total (%)	Male (Number)	Female (Number)	Male (%)	Female (%)
0–1	887	12.63%	453	434	51%	49%
1–5	3,010	42.89%	1,555	1,455	51.6%	48.4%
6–10	2,013	28.67%	1,010	1,003	50.2%	49.8%
11–14	1,110	15.81%	545	565	49.1%	50.9%
<b>Total</b>	<b>7,020</b>	<b>100%</b>	<b>3,563</b>	<b>3,457</b>	<b>50.7%</b>	<b>49.3%</b>

The table 4 shows the socioeconomic status distribution of 7,020 children attending the pediatric OPD. A majority, 57.3%, come from low socioeconomic backgrounds, while

42.7% belong to middle-high socioeconomic groups. This indicates a significant utilization of healthcare services by children from lower socioeconomic strata.

Table 4 Socioeconomic Status Distribution of Children Attending Pediatric OPD

Socioeconomic Status	Number of Cases	Percentage (%)
Low	4,022	57.30
Middle-High	2,998	42.70
<b>Total</b>	<b>7,020</b>	<b>100%</b>

The table 5 presents the education levels of guardians/parents of 7,020 children attending the pediatric OPD. The majority (31.19%) have completed secondary education, followed by 28.3% with primary education. A significant portion (23.07%) holds higher education

qualifications, while 17.42% have no formal education. This distribution highlights that a considerable number of guardians possess basic or secondary education, which may influence their health-seeking behavior and understanding of healthcare instructions for their children.

Table 5 Education Level of Legal Guardian\*/Parents\* of Children Attending Pediatric OPD

Education Level	Number of Cases	Percentage (%)
No Formal Education	1,223	17.42
Primary Education	1,987	28.30
Secondary Education	2,190	31.19
Higher Education (Diploma/Graduate)	1,620	23.07
<b>Total</b>	<b>7,020</b>	<b>100%</b>

➤ *\*Either Father or Mother or any Legal Guardian who Brought Child at Hospital OPD*

The table 6 shows the disease distribution of 7,020 children attending the pediatric OPD. Respiratory infections, both viral and bacterial, are the most common (19.97%), followed by gastroenteritis (11%) and pain abdomen (9%). Among abdominal pain cases, functional pain (6.66%) significantly outweighs organic causes (2.33%).

Malnutrition(Undernutrition), enteric fever, and acute conjunctivitis also contribute notably, with percentages ranging from 7.3% to 8%. Allergic conditions (5.5%) and asthma (5%) are prominent, while less common conditions include skin infections (4%), seizures (3.5%), and urinary tract infections (4.5%). Rare diseases like tuberculosis and childhood tumors represent a minimal share.

Table 6 Disease Distribution of Children Attending Pediatric OPD

Disease	Number of Cases	Percentage (%)
Respiratory Infections (Viral/Bacterial/Tubercular)	1,402	19.97
Gastroenteritis (Viral/Bacterial/Parasites/Secondary Lactose Intolerance and Food Intolerance)	772	11
Pain Abdomen	632	9
- Functional Abdominal Pain	468	6.66
- Organic Pain Abdomen (APD, Infantile Colics, infection, infestation, constipation, mesenteric lymphadenitis of reactive or non-reactive)	164	2.33
Malnutrition (Undernutrition)	562	8
Enteric Fever (Typhoid/Paratyphoid)	519	7.4
Acute Conjunctivitis	512	7.3
Allergic Conditions (Rhinitis, Urticaria)	386	5.5
Asthma (Acute and Chronic)	351	5
Acute Hepatitis	343	4.89
Urinary Tract Infections (UTIs)	316	4.5
Skin Infections (Bacterial/Fungal)	281	4
Seizure Disorders (Febrile Seizures, Epilepsy)	246	3.5
Ear Conditions (Otitis Media, etc.)	176	2.5
Developmental Delays/Disorders	140	2
Dermatitis (Atopic and Contact)	105	1.5
Neonatal Sepsis	95	1.35
Scabies	56	0.8
Dengue Fever	49	0.7
Fever of Unknown Origin	15	0.22
Chickenpox	14	0.2
Dog Bites	13	0.18
Acute Pyogenic Meningitis	10	0.14
Hypothyroidism (Congenital + Acquired)	9	0.13
Tuberculosis (Extrapulmonary)	8	0.11
Suspected Childhood Tumor (Referred)	5	0.07
Obesity (80-90 kg in 13-14 years), probably overnutrition	3	0.04
<b>Total</b>	<b>7,020</b>	<b>100%</b>

#### IV. DISCUSSION

This study provides a comprehensive overview of the clinico-demographic profile of pediatric patients attending the outpatient department (OPD) of a tertiary care center in Gandaki Province, Nepal, between April 12 and December 17, 2023. The findings offer critical insights into the distribution of childhood diseases, socioeconomic disparities, and parental education levels influencing healthcare-seeking behavior in the region.

The results indicate that younger children, particularly those aged 1–5 years, were the predominant age group (42.89%) seeking care at the pediatric OPD. This reflects the global trend where early childhood is marked by a higher vulnerability to infections and other illnesses due to developing immune systems<sup>6</sup>. The observed pattern aligns with similar studies conducted in low- and middle-income countries (LMICs), where children under five years of age represent the most frequent users of healthcare services<sup>7,8</sup>. This age-related healthcare utilization highlights the need for enhanced pediatric care services aimed at early childhood illnesses and preventive interventions in Nepal<sup>9</sup>.

In terms of gender distribution, the study found a near-equal proportion of male (50.7%) and female (49.3%) children, suggesting balanced healthcare access between genders. These findings resonate with other studies in South Asia, where cultural and socioeconomic factors may no longer strongly favor one gender over the other in seeking pediatric care<sup>10</sup>. The balanced gender representation may reflect evolving societal norms in Gandaki Province, promoting equitable access to healthcare for both boys and girls<sup>11</sup>.

Socioeconomic status plays a significant role in healthcare utilization, as 57.3% of children in this study belonged to low-income families. This finding underscores the persistent impact of poverty on pediatric health, limiting access to quality healthcare services and contributing to higher disease burden among children from disadvantaged backgrounds<sup>12</sup>. The association between low socioeconomic status and poor health outcomes is well-documented, as economic hardship often correlates with malnutrition, inadequate hygiene, and limited access to healthcare facilities<sup>13,14</sup>. The results of this study reaffirm the need for targeted public health interventions and resource allocation to improve healthcare access for low-income families in Gandaki Province<sup>15</sup>.

Parental education emerged as another critical determinant of health-seeking behavior. The majority of parents or guardians (either father or mother or any legal guardian who brought child at hospital OPD) in this study had secondary education (31.19%) or primary education (28.3%), with 17.42% reporting no formal education. Studies have shown that higher parental education levels are positively associated with better health outcomes for children, as educated parents are more likely to recognize early symptoms, follow medical advice, and access preventive services<sup>16</sup>. In this context, the low level of parental education in the study population may hinder effective disease management and adherence to treatment protocols<sup>17</sup>. Therefore, improving health literacy among parents, particularly those with lower education levels, should be a priority in health policy planning for Gandaki Province<sup>18</sup>.

The most prevalent diseases identified in this study were respiratory infections (19.97%), gastroenteritis (11%), and pain abdomen (9%), reflecting a common pattern of childhood illnesses in LMICs<sup>19</sup>. Respiratory infections, including viral and bacterial etiologies, are known to be a leading cause of morbidity and mortality among children in resource-limited settings, driven by factors such as malnutrition, poor housing, and inadequate vaccination coverage<sup>20</sup>. Similarly, gastroenteritis remains a major public health concern, particularly in regions with suboptimal sanitation and limited access to clean water<sup>21</sup>. Pain abdomen, a non-specific symptom associated with a variety of underlying causes, highlights the need for accurate diagnosis and management to prevent progression to more severe conditions<sup>22</sup>.

Malnutrition, especially undernutrition (8%), another significant finding, emphasizes the persistent challenges of food insecurity and inadequate nutrition among children in the study region<sup>23</sup>. Chronic such malnutrition during childhood can lead to stunted growth, cognitive deficits, and increased susceptibility to infections<sup>24</sup>. Out of different causes of such malnutrition like chronic diarrhea, malabsorption, anemia, rickets etc., chronic diarrhea seems to have major role in our study. The prevalence of enteric fever (7.4%) and acute conjunctivitis (7.3%) further illustrates the burden of infectious diseases in the region, which is likely exacerbated by poor sanitation and overcrowded living conditions<sup>25</sup>. The prevalence of acute conjunctivitis is also likely to be exacerbated in our study due to effect of national epidemics of acute conjunctivitis during our study period.

The study's findings highlight several areas where healthcare interventions can be enhanced. First, respiratory and gastrointestinal conditions remain leading causes of pediatric morbidity, warranting strengthened preventive measures such as immunization campaigns and improved sanitation practices<sup>26</sup>. Second, addressing the social determinants of health, particularly poverty and low parental education, is crucial to reducing the disease burden and improving healthcare outcomes in Gandaki Province<sup>27</sup>. Third, targeted public health programs should focus on enhancing health literacy and promoting awareness among parents, especially those from disadvantaged socioeconomic

backgrounds<sup>28</sup>. Lastly, improving access to affordable and quality healthcare services in rural areas is essential to ensure that children receive timely and appropriate medical care<sup>29</sup>.

## V. CONCLUSION

The high prevalence of respiratory infections, gastroenteritis, and abdominal pain, coupled with the significant representation of children from low-income families, underscores the urgent need for targeted healthcare interventions in the region. Furthermore, improving parental education and addressing the social determinants of health will be key to reducing the burden of childhood illnesses and enhancing overall pediatric health outcomes in Nepal.

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No

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No

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