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To Identify the Prevalence, Risk Factors Associated with Pediatric Diseases and their Treatment Pattern in a Tertiary Care Hospital

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ABSTRACT

The study aimed to identify the prevalence and risk factors associated with pediatric diseases and their treatment pattern in a tertiary care hospital. The study's objectives include evaluating the recruited patients' socio-demographic details, identifying the prevalence and risk factors for pediatric diseases, determining the diagnostic test for pediatric diseases, and evaluating the prescribing pattern of drugs in managing pediatric diseases. The present study revealed that the majority of the pediatric patients admitted with pneumonia had a good treatment outcome. Patients treated with antibiotics showed a better treatment outcome than patients treated with crystalline penicillin alone. Longer duration of hospital stay was more likely associated with poor prognosis. Therefore, particular consideration should be given to children needing other interventions. In this reading, Amoxycillin was recommended as the first-line treatment with simple pneumonia and third-generation cephalosporin for those with severe/very severe pneumonia in the health center setups. To rationalize antibiotic prescription, adherence to WHO standard case-management protocols is recommended. The proper design of antibiotic guidelines should use a consistent grading system for the quality of evidence and strength of recommendations and seek the stakeholders' preference to improve the guidelines' applicability to minimize the occurrence.

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INTRODUCTION

Significant causes of death among children vary by age. Children under 5 are especially vulnerable to infectious diseases like malaria, pneumonia, diarrhea, HIV, and tuberculosis. For older children, non-communicable diseases, injuries, and conflict pose significant threats [1]. We support countries to strengthen primary health care systems – especially at the community level, and combat common infectious diseases such as malaria, pneumonia, diarrhea, HIV, and tuberculosis. In the late twentieth century, substantial reductions in child mortality occurred in low- and middle-income countries. The fall in child deaths during 1960–90 averaged 2.5% per year, and the risk of dying in the first five years of life halved – a significant achievement in child survival. Preventive measures against malaria require-public–private cooperation. They include netting the windows and other open channels and environmental management of stagnant water to remove mosquito breeding sites [2]. To kill developing mosquito larvae, breeding sites should be drained, larvae-eating fish can be introduced, and organic oils such as

kerosene can be spilled onto stagnant water reservoirs. Recent and historical evidence suggests that drinking and irrigation water reservoir management can significantly decrease mosquito population densities [3].

METHODOLOGY

This prospective study was performed for six months. The study was conducted in the pediatrics department of a tertiary care hospital. A written informed consent form was obtained from the patient's guardians. A sample size of 295 patients was enrolled in the study [4].

Study Design

It will be a Prospective observational study [5].

Study Period

The Present study was conducted for a period of six months, from July 2021 to December 2021.

Study Site

The Present study was conducted in the pediatrics department.

Sample Size

It was 295 Patients.

Type of Study Patients

Outpatients.

Inclusion Criteria

1. Patients with an age of more than 18 years.
2. Patients who are willing to participate in the study.
3. Patients diagnosed with various pediatric infections [6].

Exclusion Criteria

1. Patients who are not willing to give consent.
2. Pregnancy.
3. Cognitive impairment.
4. Patients with improper diagnosis details.
5. Lactation [7].

Institutional Ethics Committee (IEC) Consideration

The research protocol was prepared and submitted to the ethical committee. The institutional ethical committee clearance was obtained from the institutional human ethics committee permitted to perform the research in the general medicine department [8].

Patient Data Collection and Management

The patient data collection form was created with the physician's assistance, teaching pharmacy practice faculty to collect the data from medication charts. The data collection tool includes information about age, sex, past medical history, and treatment. The information about drug details, dose and frequency of administration, and therapy duration was collected from the treatment chart [9].

Statistical Analysis

SPSS software was used for analysis, and measurement data are expressed as the mean ± standard deviation. Measurement data are expressed as a percentage; the $\chi 2$ test compared sample rates. $P<0.05$ was considered to indicate a statistically significant difference [10].

RESULTS AND DISCUSSION

The study was carried out for six months in a tertiary care hospital pediatric department. A total of 295 patients were enrolled in the study.

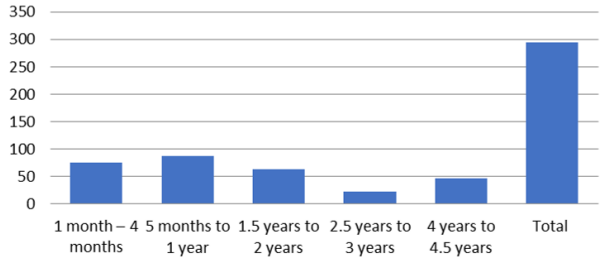

Figure 1: Age

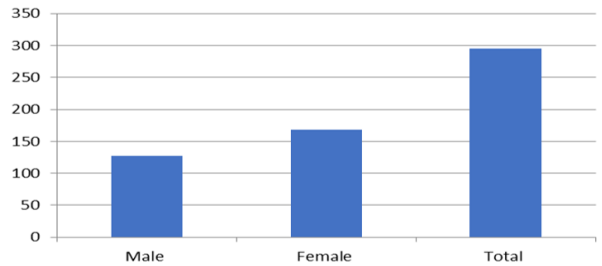

Figure 2: Gender

The age-wise distribution of patients includes 105 enrolled in the study. The age-wise distribution of the study patients had 76 (25.76%) patients in the age group of 1 month -4 months, 87 (29.49 %) patients in the age group of 5 months to 1 year, 64 (21.69 %) patients in the age group of 1.5 years to 2 years, 22 (7.45 %) patients were in the age group of

Table 1: Age of the Child

S.No	Age	Total N= 295	Percentage (%)
1	One month – 4 months	76	25.76
2	Five months to 1 year	87	29.49
3	1.5 years to 2 years	64	21.69
4	2.5 years to 3 years	22	7.45
5	Four years to 4.5 years	46	15.59
	Total	295	

Table 2: Gender of the Child

S.No	Gender	Total N= 295	Percentage (%)
1	Male	127	43.05
2	Female	168	56.94
	Total	295	

Table 3: Education of the Mothers

S.no	Education	Total N= 295	Percentage (%)
1	Diploma	198	67.11
2	Graduate	52	17.62
3	Postgraduate	45	15.25
	Total	295	

Table 4: Family Status

S.no	Family Status	Total N= 295	Percentage (%)
1	Joint	238	80.67
2	Nuclear	57	19.32
	Total	295	

Table 5: Family Members

S.no	Family Members	Total N= 295	Percentage (%)
1	1-3	85	28.81
2	4-5	93	31.52
3	6-9	117	39.66
	Total	295	

Table 6: Monthly Income

S.no	Monthly Income	Total N= 295	Percentage (%)
1	15,000	175	59.32
2	16,000-25,000	85	28.81
3	26,000-35,000	35	11.86
	Total	295	

Table 7: Occupation of the Mothers

S.no	Occupation	Total N= 295	Percentage (%)
1	Housewife	78	26.44
2	Farmer	92	31.18
3	Teacher	100	33.89
4	Lawyer	25	8.47
	Total	295	

Table 8: Locality Status-Wise Distribution

S.no	Locality Status	Total N= 295	Percentage (%)
1	Urban	197	66.77
2	Rural	98	33.22
	Total	295	

Table 9: Number of Drugs Prescribed Per Prescription

S.No	Number of Drugs	Total N= 295	Percentage (%)
1	Two	78	26.44
2	Three	68	23.05
3	Four	72	24.40
4	Five	77	26.10
	Total	295	

Table 10: Number of Dosage Forms Prescribed Per Prescription

S.No	Dosage Form	Total N= 295	Percentage (%)
1	Injection	71	24.06
2	Syrup	69	23.38
3	Tablet	100	33.89
4	Suppository	55	18.64
	Total	295	

Table 11: Number of Antibiotics Prescribed

S.No	Antibiotics	Total N= 295	Percentage (%)
1	Ceftriaxone	10	3.38
2	Pantoprazole	29	9.83
3	Amikacin	41	13.89
4	Citrine	28	9.49
5	Chloroquine	63	21.35
6	Ofloxacin	19	6.44
7	Diclofenac	38	12.88
8	Platelet therapy	21	7.11
9	Permethrin cream	30	1.016
10	Tinidazole	16	5.42
	Total	295	

Table 12: Categories of Pediatric Infections

S.No	Infections	Total N= 295	Percentage (%)
1	Dermatology infections	18	6.101
2	Respiratory tract infections	17	5.82
3	Gastrointestinal infections	25	8.47
4	Urinary tract infections	22	7.45
5	Ear infections	31	10.50
6	Nose infections	30	10.16
7	Throat infection	24	8.13
8	Malaria	26	8.81
9	Typhoid	28	9.49
10	Dengue	74	25.08
	Total	295	

Table 13: Laboratory Test

S.No	Antibiotics	Total N= 295	Percentage (%)
1	Blood test	126	42.71
2	Typhoid test	45	15.25
3	Malaria test	36	12.20
4	Dengue test	20	6.77
5	Biopsy	19	6.44
6	Urine culture	49	16.61
	Total	295	

Table 14: Combination of Antibiotics Prescribed

S.No	Antibiotics	Total N= 295	Percentage (%)
1	Amoxicillin+Clavulanic acid	49	16.61
2	Piperacillin + Tazobactum	111	37.62
3	Ofloxacin+Cefixime	108	36.61
4	Cefixime+Linezolid	27	9.15
	Total	295	

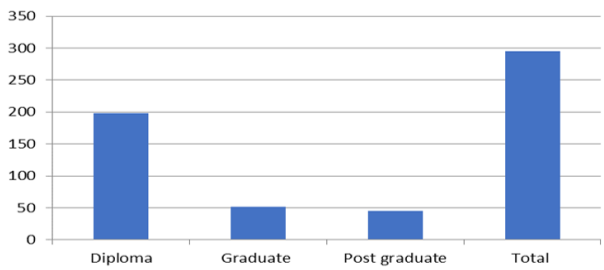

Figure 3: Education of the Mothers

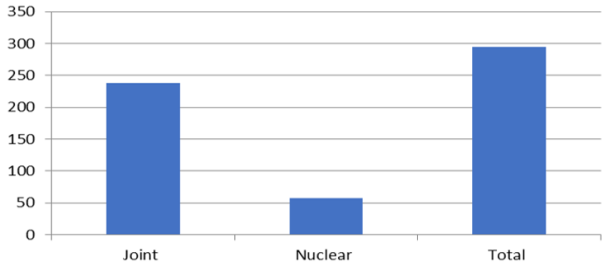

Figure 4: Family Status

2.5 years to 3 years, 16 (15.59 %) patients were in the age group of 4 years to 4.5 years [Table 1 and Figure 1]. A total of 295 patients were selected for the study. The male patients were 127 (43.05%), and the female patients were 168 (56.94%) [Table 2 and Figure 2]. Diploma education qualification was 198 (67.11%), Graduate education qualification was 52 (17.62%), and Postgraduate education qualification was 45 (15.25%) [Table 3 and Figure 3]. The study participants' family status includes joint family (238 (80.67%) and nuclear family 57 (19.32%) [Table 4 and Figure 4]. Family members of study participants include 1-3 family members were 85 (28.81%), 4-5 family members 93 (31.52%), and 6-9 family mem-

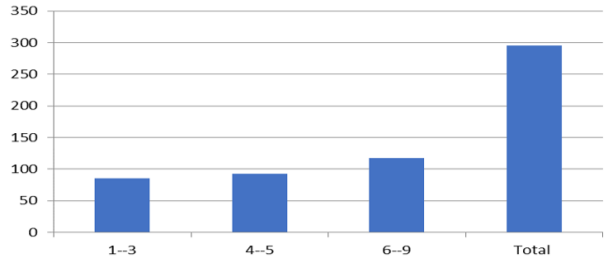

Figure 5: Family Members

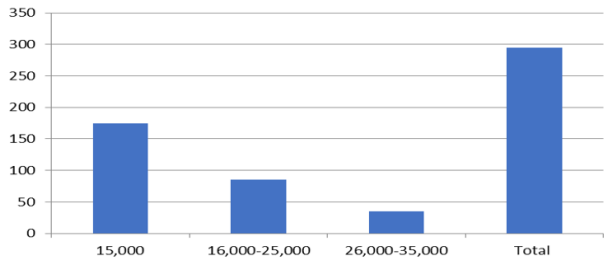

Figure 6: Monthly Income

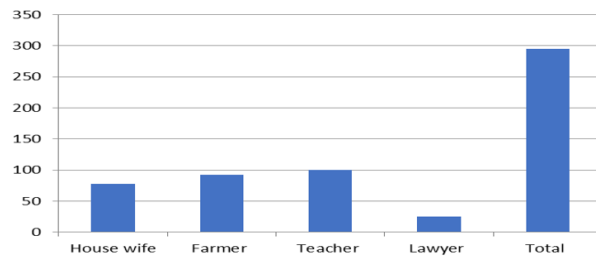

Figure 7: Occupation of the Mothers

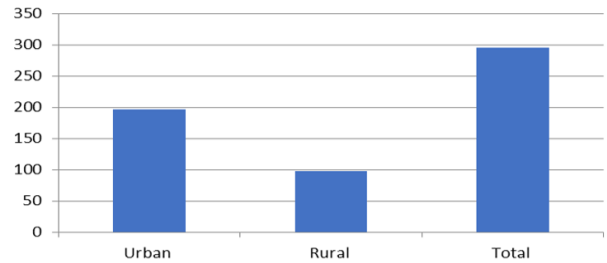

Figure 8: Locality Status

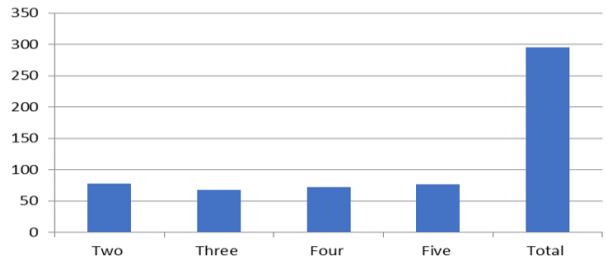

Figure 9: Number of Drugs Prescribed

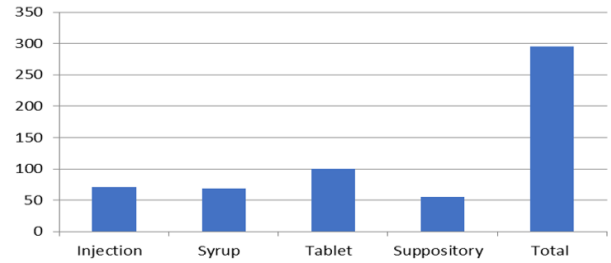

Figure 10: Number of Dosage Forms

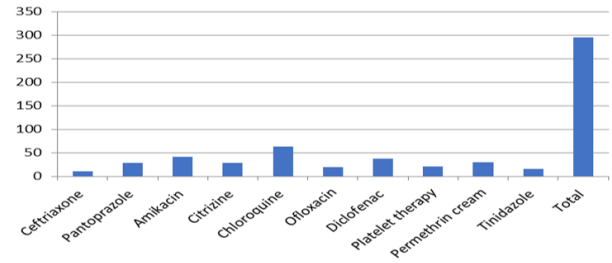

Figure 11: Number of Antibiotics Prescribed

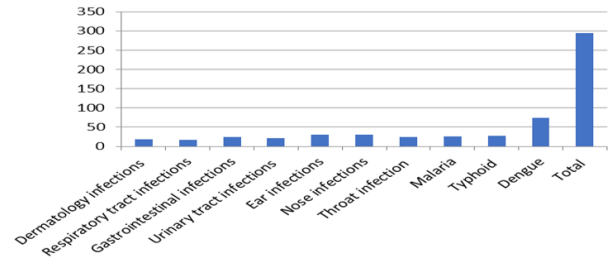

Figure 12: Categories of Infections

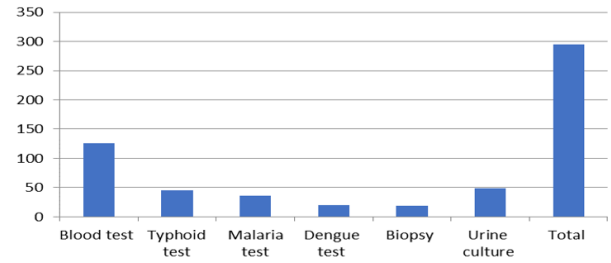

Figure 13: Laboratory Test

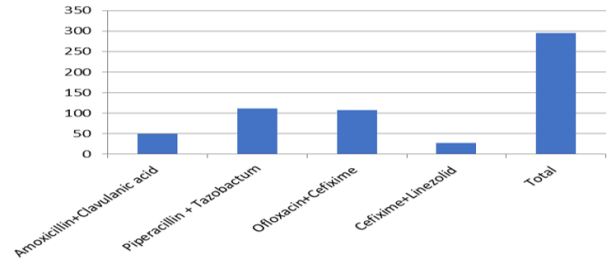

Figure 14: Combination of Antibiotics Prescribed

bers were 117 (39.66%) [Table 5 and Figure 5]. The monthly income of study participants included 15,000 income subjects 175 (59.32%), 16,000-25,000 income subjects 85 (28.81%), and 26,000-35,000 income subjects 35 (11.86%) [Table 6 and Figure 6]. Occupation of study subjects included Housewife occupation 78 (26.44%), Farmer occupation was 92 (31.18%), Teacher occupation was 100 (33.89%), and Lawyer occupation was 25 (8.47%) [Table 7 and Figure 7]. The Locality status of the patients included 197 (66.77%) patients who belonged to the urban locality and 98 (33.22%) patients who belonged to the rural locality [Table 8 and Figure 8].

The Number of drugs prescribed medications per prescription includes two medicines prescribed to patients at 78 (26.44%), three drugs prescribed to patients were 68 (23.05%), four medicines prescribed to patients were 72(24.40%), five medications prescribed to patients were 77 (26.10%) [Table 9 and Figure 9]. The Number of Dosage Forms prescribed per prescription includes injection dosage forms prescribed to patients 71(24.06%), syrup dosage forms prescribed to patients 69 (23.38%), tablet dosage forms specified patients were 100 (33.89%), suppository dosage forms prescribed patients were 55 (18.64%) [Table 10 and Figure 10]. Ceftriaxone-prescribed patients were 10 (3.38%), Pantoprazole prescribed patients were 29 (9.83%), Amikacin stipulated patients were 41 (13.89%), Citrizine specified patients were 28 (9.49%), Chloroquine-prescribed-patients were 63 (21.35%), Ofloxacin prescribed patients were 19 (6.44%), Diclofenac prescribed patients were 38 (12.88%), Platelet therapy prescribed patients were 21 (7.11%), Permethrin cream prescribed patients were 30 (1.016%), Tinidazole prescribed patients were 16 (5.42%) [Table 11 and Figure 11].

The various categories of pediatric Infections include Dermatology infections patients 18 (6.101%), Respiratory tract infections patients 17 (5.82%), Gastrointestinal infections patients 25(8.47%), Urinary tract infections patients 22 (7.45%), Ear infections patients 31 (10.50%), Nose infections patients were 30 (10.16%), Throat infection patients were 24 (8.13%), Malaria patients were 26 (8.81%), Typhoid patients were 28 (9.49%), Dengue patients were 74 (25.08%) [Table 12 and Figure 12]. It includes blood test patients, 126 (42.71%); typhoid test patients, 45 (15.25%); malaria test forty-five thousand eight hundred ninety-six patients, 36 (12.20%); dengue test patients, 20 (6.77%); biopsy patients, 19 (6.44%), Urine culture patients, 49 (16.61%) [Table 13 and Figure 13]. The combination of antibiotics includes Amoxicillin+Clavulanic acid prescribed patients were 49 (16.61%), Piperacillin + Tazobactum prescribed patients were 111 (37.62%), Ofloxacin+Cefixime specified patients were 108 (36.61%), Cefixime+Linezolid s2+9*+-6tipulated patients were 27 (9.15%) [Table 14 and Figure 14].

DISCUSSION

The age group of 5 months to 1-year patients was more than 87 (29.49 %) compared to other ages.

Female patients were more 168 (56.94%) than males. Diploma education qualification was more than 198 (67.11%) compared to other educational qualifications. The joint family was more than 238 (80.67%) compared to the nuclear family. In our study 6-9 family members were more 117 (39.66%) than other family members.

In our monthly study income of study participants, 15,000 income subjects were more than 175 (59.32%) compared to another category of payments. Teacher occupations were more than 100 (33.89%) compared to other works. Urban locality patients were more 197 (66.77%) compared to the rural category of patients. Two drugs prescribed patients were more 78 (26.44%) compared to other prescribed medications. Tablet dosage forms prescribed to patients were more than 100 (33.89%) compared to different prescribed drug formulations. Chloroquine-prescribed patients were more 63 (21.35%) than other antibiotics. Dengue patients were more 74 (25.08%) than other diagnosed cases. Blood test referred patients were more than 126 (42.71%) compared to other lab tests. Piperacillin + Tazobactum prescribed patients were more 111 (37.62%) than different antibiotic drug combinations.

CONCLUSION

The present study revealed that most pediatric patients admitted with pneumonia had a good treatment outcome. Patients treated with antibiotics showed a better treatment outcome than patients treated with crystalline penicillin alone. Longer duration of hospital stay was more likely associated with poor prognosis. Therefore, particular consideration should be given to children in need of other interventions.

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Conflict of Interest

The authors declare no conflict of interest, financial or otherwise.

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