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To investigate the clinico-demographic profile and risk variables linked with measles patients

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Abstract
Aim: The purpose of this study is to investigate the clinico-demographic profile and risk variables linked with measles patients.
Material and Methods: This hospital-based cross-sectional study was conducted among children who presented in the Paediatric OPD over the course of a year. Children who satisfied the criteria for clinical measles as per WHO criteria i.e Fever with rash lasting at least 3 days and cough/coryza (running nose), or conjunctivitis (red eyes) were included in the study. The research comprised 240 children who presented in OPD throughout the study period. 82 of the 240 children' were admitted in the pediatric ward had one or more complications of the measles.
Results: It was found that 82 cases of clinical measles, with a frequency of 34.17%, were admitted out of a total of 240 cases. The attack rate (Table 1) was highest (71.95%) in the age range of 0–5 years, as is also evident from the table. Male child (43.90%) and female child (56.10%) were shown to have a little advantage. The majority of children who contracted measles were between the ages of 1 - 5 (57.32%) and 5 - 10 (21.95%), respectively. Children who live in rural slums are more likely to be attacked (79.27%). The majority of measles cases (50%) are associated with lower socioeconomic level. Only 24.39% of children with measles attacks were exclusively breastfed for initial six months according to research. In 29 instances (35.36%) the immunization status was "complete," whereas 50% of the youngsters (14.63%) were only partly immunized. With the exception of 8 measles cases, all were malnourished with category II and above.
Conclusion: The vast majority of the cases had been found in children who had not been vaccinated, which indicates that vaccination coverage should be increased. In addition to this, there were cases found in children who had been vaccinated, which indicates that there is a possibility of a vaccine failing in older children and the necessity of including a second dose of vaccination as quickly as possible in the immunisation programme.

Keywords: Clinico-demographic, measles, children's

Introduction
The Measles virus (MeV) is responsible for the extremely infectious systemic viral illness known as the measles. This virus contains a lipid coat, a ssRNA genome, and it is a member of the Paramyxoviridae family. It spreads by close or direct contact with infected secretions as well as respiratory droplets. High-grade fever (>38 °C for more than three days), generalised maculopapular rashes, cough, coryza, and conjunctivitis are among its diagnostic indicators. Despite the existence of a reliable and efficient live attenuated viral vaccine, measles virus infection remains the greatest cause of morbidity and death in children across the globe. Around 20 million measles infections were recorded in 2010, and there were 0.14 million fatalities. In 2011, the mortality toll increased to over 0.16 million, with poor nations accounting for 95% of all fatalities [1, 2].
It is often a self-limiting infection, but it may also have a number of consequences, such as pneumonia (1 in 20 cases), otitis media (1 in 10 cases), diarrhoea, and encephalitis (1 in 1000 cases), which might appear a few days or weeks after the rash first appears [3]. Deafness, blindness, and long-term encephalitis-related morbidities are possible outcomes [2]. Measles causes 100,000 fatalities annually, with fatality rates ranging from 1 to 5 per 1,000 cases in Southeast Asia and Africa, and up to 25 per 1,000 cases among refugees. Due to active measles circulation in the unprotected and inadequately vaccinated population, measles outbreaks have been documented during the last several years all throughout the globe [4, 5]. Measles immunity may be obtained either by a lifetime infection or through vaccination.

According to Pakistan's Expanded Programme of Immunisation (EPI), children get two doses of the measles vaccine, the first at age 9 months and the second, introduced in 2009, at age 15 months [6]. Measles is a curable illness as humans are its only reservoirs, and reliable diagnostic tests as well as an efficient vaccination are both readily accessible [7, 8]. Measles mortality and incidence have decreased by 75% in affluent nations, where incidence is 36 cases per million people. Due to all of these factors, there are still pockets of slum housing and migrant populations where measles cases are present in India. By taking into account all of these facts, the current research was done to determine the clinicosocial profile of measles patients in secondary care facility.

Material and Methods

This hospital-based cross-sectional research was conducted among children's presenting in the paediatric unit over the course of a year i.e March 2021-March 2022 suspected of measles and were included in the study as per WHO criteria i.e Fever with rash lasting for 3 days or more and either cough/coryza (running nose) or conjunctivitis (red eyes).

The patients were further divided into those with complicated or uncomplicated measles. A child who had the measles plus at least one of the following signs or symptoms—pneumonia, diarrhoea, otitis media, laryngotracheitis, corneal ulceration, blindness, and acute encephalitis was considered to have complicated measles. A youngster who got the measles without any complications was considered uncomplicated case. The study comprised 240 children who presented in the hospital throughout the study period after obtaining the parent's or another caretakers consent present at the time of the examination. Structured questionnaire was utilised to collect data from parents or guardians on the age, gender, primary symptoms, duration, and vaccination status of children presenting with measles. 82 of the 240 children's who were admitted to the ward had one or more complications of measles. Using the most recent All India Consumer Price Index data and the revised BG Prasad categorization, it was established the children's socioeconomic position. "Exclusively breastfed" refers to a baby receiving just breast milk and nothing else, while "partially breastfed" refers to children's who received breast milk as well as formula or bottle milk. Using the immunisation cards that were on hand for the children's, the immunisation status was determined. In rare instances when an immunisation card wasn't accessible, the responder was thoroughly questioned to determine their immunisation status. The Indian Academy of Paediatrics (IAP) categorization with grades of I, II, III, and IV malnutrition with particular cut off points was used to evaluate the child's nutritional condition.

Data analysis

The data was analyzed using SPSS Version 25.0 and descriptive statistics were presented using percentages.

Results

It was found that 82 cases of measles, with a frequency of 34.17%, were admitted out of a total of 240 cases. The assault rate (Table 1) was greatest (71.95%) in the age range of 0–5 years, as is also evident from the table. Male child (43.90%) and female child (56.10%) were shown to have a little advantage. The majority of children who contracted measles were between the ages of 1 - 5 (57.32%) and 5 - 10 (21.95%), respectively. Children who live in rural slums are more likely to be attacked (79.27%). The majority of measles cases (50%) are associated with lower socioeconomic level.

Table 1: Basic profile of the participants

	Number	Percentage
Gender		
Male	36	43.90
Female	46	56.10
Age Group		
Below 1 years	12	14.63
1 -5 years	47	57.32
5-10 years	18	21.95
above 10 years	5	6.10
Socioeconomic Status		
Lower	41	50
Middle	29	35.36
Upper	12	14.63
Type of Residence		
Rural	65	79.27
Urban	17	20.73

Table 2: Immunization and nutrional status

Immunization status	Number	Percentage
Completely Immunized	29	35.36
partially Immunized	12	14.63
Not Immunized	41	50
Feeding Status		
Exclusively breast fed	20	24.39
Partial Breast fed	62	75.61
Nutrional Status		
Normal	8	9.76
Grade I	16	19.51
Grade II	17	20.73
Grade III/IV	41	50

Only 24.39% of children with measles attacks were exclusively breastfed according to study. In 29 instances (35.36%) the immunisation status was "complete," whereas 50% of the youngsters (14.63%) were only partly immunised. With the exception of 8 measles cases, all (50%) were malnourished (Table 2).

Table 3: Clinical profile of the participants

Clinical Profile	Number	Percentage
Fever	80	97.56
Rash	80	97.56
Cough	78	95.12
Conjunctivitis	68	82.93
Oral ulcers	64	78.05
Breathing difficulty	62	75.61
Diarrhea	35	42.68
Vomiting	25	30.49

As stated in table 3, the typical clinical symptoms were fever, rash, cough, conjunctivitis, mouth ulcers, and difficulty breathing.

Discussion

Measles, commonly known as rubeola, is a highly contagious illness that may be avoided by receiving the appropriate vaccinations. Despite having the potential to be eliminated, it continues to be a major cause of infant death,

especially in developing countries like India. With a secondary infection incidence of at least 90% among vulnerable home contacts, it is one of the most infectious illnesses. Within the family Paramyxoviridae, the measles virus is a member of the genus Morbillivirus. A rash that lasts at least three days, a fever that lasts at least one day and often rises over 40 degrees Celsius, and at least one of the three Cs—cough, coryza, or conjunctivitis—are all clinical signs of measles [9]. Millions of people died globally from the measles virus before the vaccination was developed [10]. However, measles has become comparatively rare as a result of widespread immunisation in many nations. Measles incidence decreased in Singapore from 88.5 cases per 100,000 people in 1984 to 6.9 cases per 100,000 people in 1991 because to the effective implementation of the National Childhood Immunisation Programme utilising the monovalent measles vaccine [11]. Measles outbreaks returned in 1992, 1993, and 1997. Following the implementation of the two-dose vaccination schedule in January 1998 and a "catch-up" immunisation programme utilising the trivalent MMR vaccine, the incidence of measles significantly decreased to 2.9 cases per 100,000 people in 1998. The vaccination coverage was maintained between 92 and 94% for the second dose and at 95% for the first dose. The national immunisation schedule was changed in December 2011 to move the first dose of the MMR vaccine from 15 to 18 months to 12 months of age and the second dose from 6 years to 15 months in an effort to further eradicate rare occurrences of measles. Currently, most instances in Singapore are either isolated cases or small clusters of endemic or import-related infections [11]. Measles is the sixth most lethal illness in the world for children under five [12, 13]. Despite consistently high vaccination rates using the single-dose vaccination approach, measles outbreaks have been reported in South Korea, Sri Lanka, Latin America, and Romania. Therefore, establishing high regular vaccination coverage (>90%) in every area and making sure that all kids have a second chance to be immunised against measles were suggested in the 2001–2005 WHO/UNICEF Strategic Plan for Measles Mortality Reduction and Regional Elimination [14-17]. Control of the measles, preventing outbreaks, and eliminating the measles are the three stages of the plan [18-20]. In the current investigation, 100 of the 340 hospital patients hospitalised had the measles. Measles prevalence in hospitals was found to be 34.17%. Similar research done in Bida, Nigeria, by Muhammed Adeboye *et al*. [18] indicates that (8%). It was discovered to be high, which may be because the majority of cases included people who weren't immunised and who lived in urban slum areas. A majority of the affected children (57.32%) were between the ages of 1 and 5 years, followed by 5 to 10 years. This may be because, as numerous immunological studies have shown, antibody levels created by vaccination drop with time and may become undetectable. The NICD team observation and Najam Khalique's investigation on the measles epidemic in Uttar Pradesh, India, both documented similar findings [19]. In the current research, the majority of patients (50% of all cases) belonged to lower socioeconomic category.

Conclusion

The vast majority of the cases had been found in children who had not been vaccinated which indicate that vaccination coverage should be increased. In addition to this, there were cases found in children who had been partially vaccinated particularly in rural areas which suggests strengthening of routine immunisation activity including booster doses, mass vaccination coverage in areas with measles outbreak, mass awareness regarding measles and effectiveness of vaccine in preventing the disease, improving overall health/hygiene of population and stress on female literacy to achieve the desired results.

Conflict of Interest

Not available

Financial Support

Not available

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