

# Investigating the Cases of Measles among Children under 5 Years Old in Abu Ali Sina Balkhi Education Seminary Hospital

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**Abstract:-** Measles is one of the important and infectious diseases which has always been considered due to risk of mortality, physical and mental complications and the possibility of an epidemic. This disease is known as one of the most common and important diseases in Afghanistan which has serious effects on the general health of the society. In this study investigated the cases of measles among children under 5 years in Abu Ali Sina Balkhi education seminary hospital. This research is a descriptive-applied type of research that was conducted on children under 5 years of age in measles in the pediatric department of Abu Ali Sina Balkhi education seminary hospital during in the 2022 year. The information was collected using patient files and then entered into spss28 software. The sample size was selected using Morgan's table and Cochran's formula of 200 children. The evidence showed that measles disorders in children under 5 years old. The finding show that (200) people, (99) people of pneumonia, (24) people pneumonia / AFE, (17) people of acute gastroenteritis, and (21) people of Croup, (19) people of Meningoencephalitis, and (20) people Otitis media disorder have been reported.

Finding shows that in March (120)people (13.3%) ,in May (98) people (10.8%), in June (89)people (9.8%) ,in July (94)people (10.4%), in August (87)people (9,6%), in September (78) people (8.6%), in October (56) people (6.2%) , in November (76) people (8.4%) , in December(56) people (6.2%) , in January (44 ) people (4.8%) and in March (57)people (6.3%) came to Abu Ali Sina Balkhi hospital , the majority of whom were under 5 years old .

**Keywords:-** Measles, children under 5 years old, Mortality, Malnutrition, Infection.

## I. INTRODUCTION

Measles is an acute viral disease with high infectious, one of the most infectious disease of infants and children in different parts of the world, it is capable of causing severe diseases and significant mortality which causes immunity for a lifetime (Safar, 1379:7).

One of the most important program that is being implemented to improve the health of children in developing countries is the gradual victory of major diseases that can be prevention by vaccines. And one of the most deadly diseases in this group is measles, which is still among the vaccine-preventable diseases, the main cause of death, malnutrition and disability in children of poor community in developing countries. (porowdisari, 1381:100).

Measles virus is transmitted mainly through respiratory aerosols in close distance and less frequently through fine dust that remains suspended in the air for a long time. The symptoms of measles start with fever and malaise, followed by coughing and sneezing. The characteristic rash of measles begins in the form of erythematous macules behind the ears, on the neck and hairline and then the face, body and arms are involved. There may be headache, abdominal pain, vomiting, diarrhea and myalgia. The world health organization has set goals for the elimination of endemic measles transmission which is based on achieving and maintaining a high level of vaccination coverage and monitoring it through a sensitive monitoring system. (Abasi, et al, 1397:221)

In Afghanistan, measles is also known as one of the prominent public health issues. despite the progress that has been made in the field of prevention and control of this disease, there is still a need for special attention to this issues and the implementation of complete and efficient programs to reduce its prevalence. based on the statistics of the ministry of public health, since the beginning of this year, (382)children have died as a result of catching measles in Afghanistan ,of which (259) were under the age of five, and total of more than (16000) positive cases have been registered. According to the report of the world health organization in Afghanistan in 2022, 5.36million children have been vaccinated against measles and 6.1 million children against polio in the nationwide campaign. According to the information of the ministry of public health of Afghanistan, this campaign was covered by 4341 vaccination teams in 34 province and 329 districts. In Afghanistan, 5484 cases of measles have been registered, of which about 300 mortality were caused by measles infection, and most of the children under 5 years old were exposed to this diseases ().in Afghanistan ,suspected cases of measles are

reported almost every year. The graph below shows the weekly number of suspected measles cases reported by WHO.

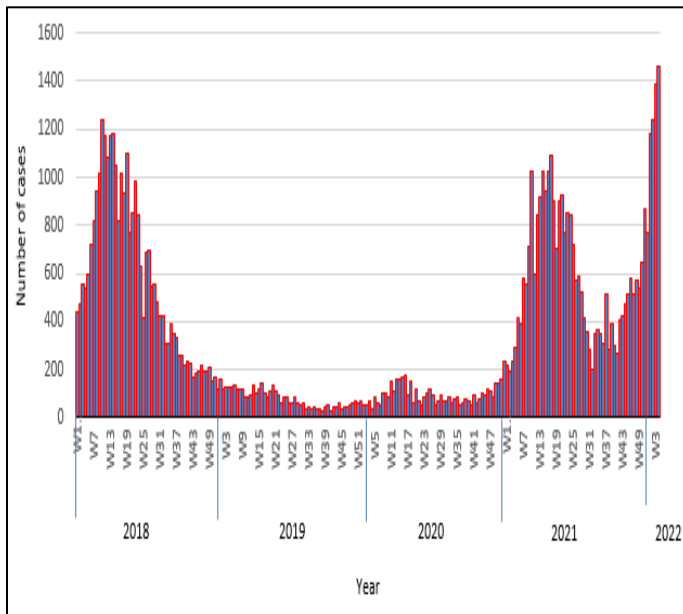


Fig 1 Weekly Number of Suspected Measles Cases Reported by WHO.

## II. ETIOLOGY

Measles virus is a single stranded lipid RNA virus belonging to the paramyxovirus family and the morbidly virus genus. Measles virus hosts only humans. Among the six basic protein structures of two-seeded measles virus, it is very important in terms of immune effects in the presence of the host, which includes hemagglutinin and fusion proteins. Neutralizing antibodies act directly against the hemagglutinin protein, and antibodies against the F protein proliferation of the virus during infection (khan et al., 2015:230).

### ➤ Epidemiology

Human are considered to be the only carriers of the infection. The infection spreads from a sick person to a healthy person in the 4 days before and 5 days after the rash appears, through small air droplets that originating from the secretions of the nose and throat. Directly contact is not necessary measles virus can remain in room air for an hour (khashabi , 1372:41).

There is also infection in the examination room of doctors and hospitals, which infects a person by contact with the respiratory tract or eyes. Approximately 90% of individuals who are exposed to infection and have not previously been cleared become infected (Emami Naeini et al, 1389:858).

Measles vaccine has changed the epidemiology of measles. The Measles was once spread around the world, but in countries with extensive vaccination coverage, its endemic

transmission has stopped, in the past measles caused infections in children in United States. 90% of the children get measles before the age of 15 (Safar and Anami , 1379:11) .

Morbidity and mortality caused by measles decreased even before the introduction of the vaccine due to improved medical care and good nutrition, but its prevalence was dramatically decreased after the vaccine offered in 1963. Attacks rate from 313 cases per 100,000 population in 1965-1968 decreased to 1.3 cases per 100,000 population in 1982-1988 (Qurbani , 1385:8)

An epidemic caused by measles occurred in 1991-1989, causing more than 55,000 cases 11,000 hospitalizations, and 132deaths (Behjati et al, 1382:29) .

### ➤ Background Research

In 2003 javadi et al, contacted a study of cases of measles in children in khorram Abad, iron. This study was conducted descriptively and cross-sectionally. All children admitted to khorramabad shahid madani hospital with diagnosis of measles (124) patient were examined. The studied variable included age, sex, month and season of hospitalization. The data was collected by questionnaire and then analyzed by spss software .the findings showed that including (124) patient under study, 78(62.9%) were boys and 46(27.1) girls .more of the cases occurred at the age of 9 months and 6-7 years .there was a statistically significant relationship between the age of measles and as well as between sex and measles . (javadi et al, 1382:37)

In 2015, khan et at conducted a study to determine the prevalence of measles among children aged 1.5-3 years and to determine the efficacy of measles vaccination in areas outside Peshawar, Pakistan over 385 children. The results showed that among 385childrne, 361 had received the measles vaccine in the ninth month. Among them, 27had contracted measles despite receiving the measles vaccine. 192 children received measles vaccination during the ninth and eighteenth months, including nine of whom passed the measles diseases (khan etal , 2015:825).

Ciofi et at. Investigated the number of cases of measles patient who needed bed –based treatment at the of Lazya hospital in Italy in 2017, more than 248 patients with measles who had been returned to the emergency branch of this hospital .among 248 measles patients, 113(45.6%) were admitted to bed . most of these patient were aged 2 years and 7 months and 31 patients had chronic venomous diseases . 85%of hospitalized patients had not been vaccinated and 94%had experienced at the least one measles disorder most cases of measles were unvaccinated people. The age of 2-3 years is the most common age of measles (ciofi, etal , 2017 :845) .

In 2015 Alam et al. Conducted a study to investigate the prevalence of measles in districts of India, Assam, Manipur, Tripura and Mizoram. This research was conducted on 206 cases of measles. Which 67.57% of these patients had IGM measles in their blood serum. 109 patients, which make up (52.9%) were at the age of under 5 years. 48 patients (23.3%) were vaccinated with measles. Most of these children were not vaccinated against the measles virus. Measles disease occurs more often in the children who have not been immune to the virus, and the highest age onset of the disease is under 5 years. (Alam et al., 2015: 228).

### III. RESEARCH METHODOLOGY

This study was a descriptive-applied study conducted on measles less than 5 years old children in the pediatric service of Abu Ali Sina Balkhi hospital during in 1401. Data were collected using the patient files and entered into SPSS 28 software. The sample size was elected using Morgan table and Cochran's formula.

#### ➤ Analysis

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	84	42	42	42
	female	116	58	58	58
	Total	200	100	100	

Source: Study Finding

Table (1) shows the descriptive statistics of measles patients according to gender. The results showed that among (200) children infected with measles, (84) of them are male

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Pneumonia	99	49.5	49.5	49.5
	Pneumonia/AGE	24	12	12	12
	Acute gastroenteritis	17	8.5	8.5	8.5
	Croup	21	10.5	10.5	10.5
	Maningoencephalitis	19	9.5	9.5	9.5
	Otitis media	20	10	10	100
	Total	200	100	100	

Source: Study Finding

Table (4) shows the frequency of measles disorders in children under five year old. The finding show that (200) people, (99) people of pneumonia, (24) people pneumonia / AFE, (17) people of acute gastroenteritis, and (21) people of Croup, (19) people of Maningoencephalitis, and (20) people Otitis media disorder have been reported.

and (116) female. Based on percentage it is 42 % male and 58%female, respectively. In 1402, a total of 490 infected children had been referred to measles in the hospital. Of which (200) were measles patients under the age of five.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	city	121	60.5	60.5	60.5
	districts	79	39.5	39.5	39.5
	Total	200	100	100	

Source: Study Finding

Table (2) descriptive statistics show patients of measles according on their place of residence. The results showed that among (200) people, (121) lived in the city (60.5%) and (79) people lived in the districts (39.5%).

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than 1 year	99	49.5	49.5	49.5
	1-3 years	68	34	34	34
	3-5 years	33	16.5	16.5	100
	Total	200	100	100	

Source: Study Finding

Table (3) descriptive statistics of measles patients by age. The results showed that among (200) people, (99) people were less than one year old (49.5%), (68) were 1-3 years old (34%) and (33) people 3-5 years (16.5%) were formed.

<b>Table (5) Number of Patient Infected with Measles According to Month(from March 2022-March 2023 )</b>					
		<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
Valid	March	120	13.3	13.3	13.3
	May	98	10.8	10.8	10.8
	June	89	9.8	9.8	9.8
	July	94	10.4	10.4	10.4
	August	87	9.6	9.6	9.6
	September	78	8.6	8.6	8.6
	October	56	6.2	6.2	6.2
	November	76	8.4	8.4	8.4
	December	56	6.2	6.2	6.2
	November	44	4.8	4.8	4.8
	December	45	5	5	5
	January	57	6.3	6.3	100
	Total	900	100	100	

Source: Study Finding

Table (5) shows the frequency of measles cases between 2022-2023. finding shows that in March (120) people (13.3%), in May (98) people (10.8%), in June (89) people (9.8%), in July (94) people (10.4%), in August (87) people (9.6%), in September (78) people (8.6%), in October (56) people (6.2%), in November (76) people (8.4%), in December (56) people (6.2%), in January (44) people (4.8%) and in March (57) people (6.3%) came to Abu Ali Sina Balkhi hospital, the majority of whom were under 5 years old.

#### IV. CONCLUSION

Measles is a cutaneous disease that is also common in Afghanistan. Due to the current climate and health condition in the country, many people may be effected by this disease. According to the world health organization in Afghanistan in 2022 5.36 million children have been vaccinated against measles and 6.1 million against polio in the nationwide campaign. According to the Ministry of Public Health, the campaign was covered by 4,341 vaccination teams in 34 province and 329 districts. In Afghanistan, 5484 cases of measles have been registered, of which about 300 mortality were caused by measles infection, and most of children under 5 years of age were exposed to this diseases. Measles is one of the important and infectious diseases which has always been considered due to risk of mortality, physical and mental complications and the possibility of an epidemic. This disease is known as one of the most common and important diseases in Afghanistan which has serious effects on the general health of the society. In this study investigated the cases of measles among children under 5 years in Abu Ali Sina Balkhi education seminary hospital. This research is a descriptive-applied type of research that was conducted on children under 5 years of age in measles in the pediatric department of Abu Ali sina Balkhi education seminary hospital during in the 2022 year The information was collected using patient files and then

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