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Research Article

**PREVALENCE AND SEASONALITY OF INFLUENZA VIRUS IN  
SOUTH PUNJAB**<sup>1</sup>Muhammad Bilal Hamzah, <sup>2</sup>Muzamil Hazoor Malik, <sup>3</sup>Umar Farooq<sup>1</sup>Medical Officer BHU Ehsanpur Kotaddu<sup>2</sup>Medical Officer THQ Hospital Murree<sup>3</sup>Medical Officer RHC Muradabad Muzaffargarh**Abstract:**

**Introduction:** Influenza is a common Pakistani Disease and its awareness in past was poor. In order to access the presence of Influenza in the District Muzaffargarh during the winter season, a district wise lab based tests were conducted to monitor the strains of influenza in the selected population. In the year 2017 influenza hit the south Punjab badly and became the cause of 17 deaths. The vaccines for influenza are widely available so that its outbreak can be controlled. The research will help to analyze the influenza cases in the selected district, its seasonality and how to avoid the mortality in the selected population.

**Methods:** District headquarter hospital, Tehsil headquarter Hospitals and Rural Health centers data about the influenza and respiratory illness was screened during the winter season from November 2017 to March 2018. Total of 1000 samples were analyzed. Influenza virus was detected in 300 cases and among them 250 cases belonged to type A influenza and 50 cases belong to type B virus during the winter and spring season.

**Conclusion:** The results of the study shows that a continuous system of awareness and surveillance for influenza should be introduced. Vaccination before the start of the season can also help in reduction of cases among the population.

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**INTRODUCTION:**

Influenza is present across the globe and is highly contagious in nature and causes respiratory infections among the people .It is an epidemic and its well known strains are type A and Type B virus in humans. Type A virus is widely spread and affects the health of public it spread fast due to its wide host range and quick evolution as compared to the Type B virus. Seasonal influenza virus remains in circulation during winter when temperature is low. WHO has conducted the global influenza surveillance system and helped the areas where risk of influenza was high in terms of lab diagnostics, vaccinations and antiviral drugs. Seasonal Influenza was widely spread during the winter season in the South Punjab and has triggered a wave of discomfort and anxiety among the local population and among the health officials due to high rate of reported cases. Mortality rate was also observed during viral surge in season. The timely treatment and good diagnosis can help to save the life of the patients. The provincial government worked hard to cope with the alarming situation during the period of influenza outbreak. Awareness campaign was also launched to make people know how the virus spread can be controlled and what preventive measures should people take during the outbreak. The people who are suffering from influenza should wear mask and also public sneezing and coughing should be avoided so that healthy people may remain away from catching virus. People can also adopt the healthy practices in order to avoid the influenza virus like regular hand wash, disinfectants use and remaining far away from people

who are suffering from viral attacks.H1N1 influenza causes the respiratory issues among patients. The people who are more prone to risk of getting influenza can be children, older people, pregnant ladies, people with multiple health issues and people with compromised immunity have the chances for developing complications during viral attacks. The objective of the study was to analyze the influenza strains circulating during the season and identify the groups which are more vulnerable to viral attacks

**Research Methodology:**

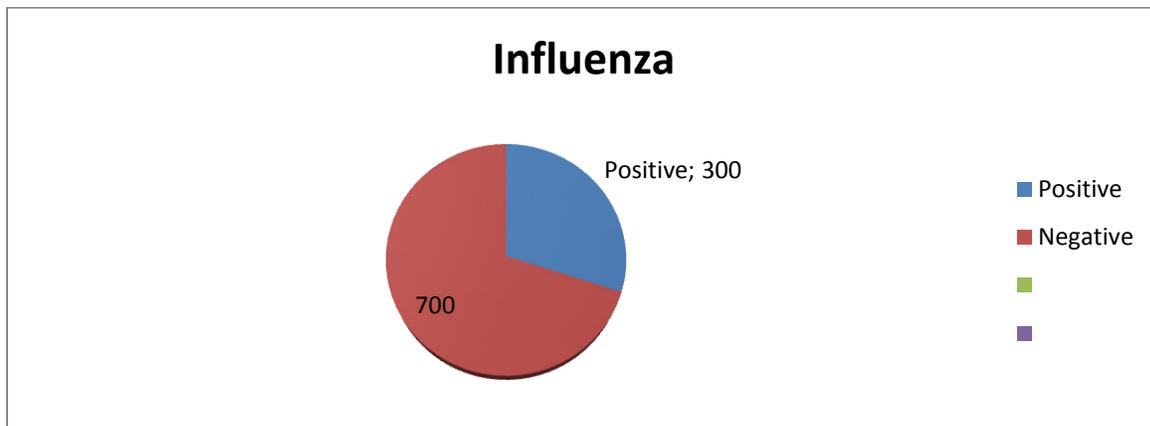
Coordinated work was conducted in the South Punjab District Muzaffargardh in order to register the cases of influenza. For lab diagnostics test blood and nasopharyngeal samples were collected .The patients with prior history of influenza were also registered for gathering information.

**Analysis of Results:**

The influenza patients belonged to two main strains of influenza Type A and Type B. Simple percentage method was used to calculate the prevalence and occurrence of disease among more vulnerable group of population.

**RESULTS:**

During November 2017 to March 2018 total of 1000 specimens were collected and by the laboratory tests 300(30%) were found positive for influenza virus. Among the positive strain 250 cases were from Type A influenza and 50 cases belonged to type B virus.

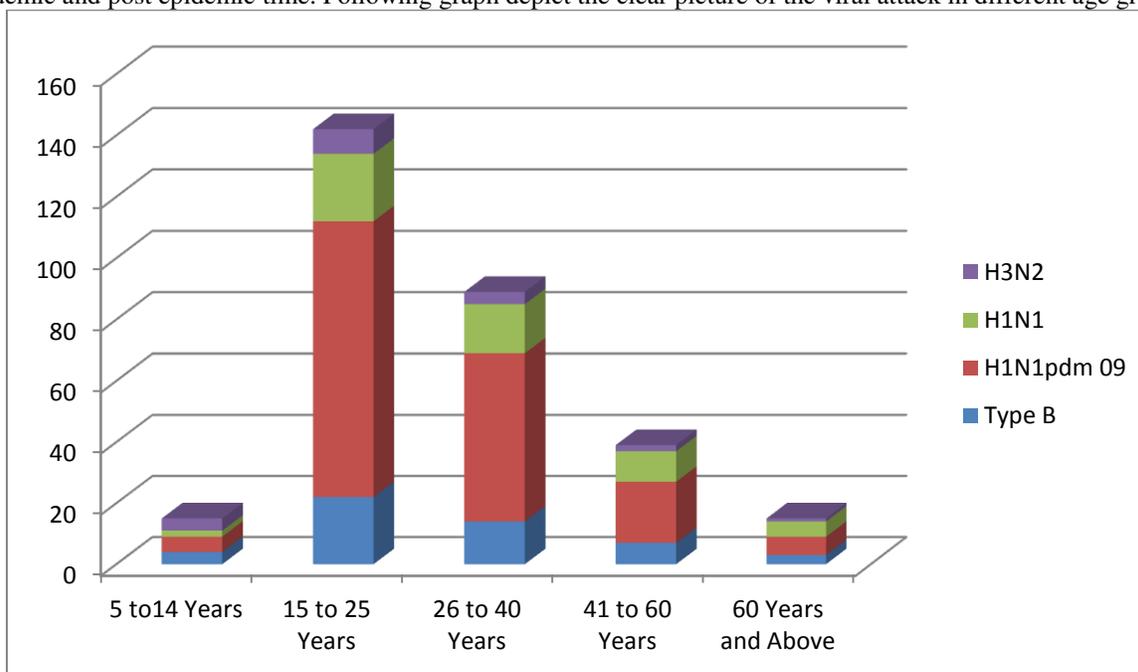


Influenza A sub typing showed that H1N1 pdm09 was widely spread (250/1000) among the area selected as compared to its rare occurrence in past. The influenza patients belonged to type A were H1N1 pdm09, H1N1, H3N2 and also type B patients. The age groups which were under consideration ranged from children to senior people. Cases against age groups were as shown in the table 1 below

Table 1

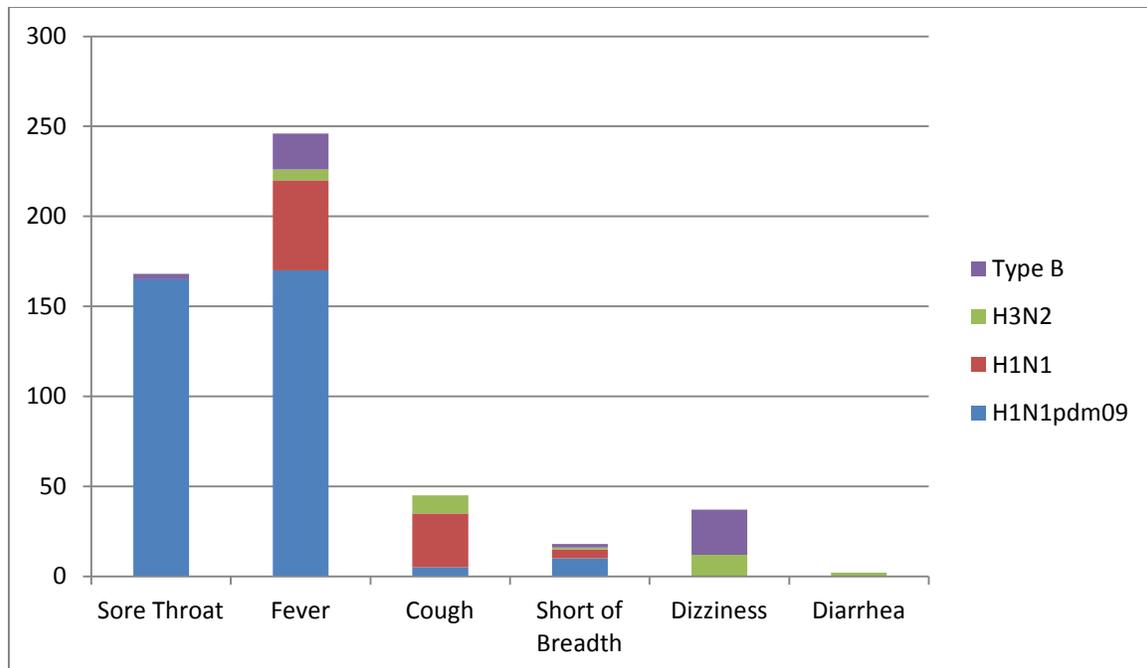
Age	Type B	H1N1pdm09	H1N1	H3N2
5 to 14 years	4	5	2	4
15 to 25 years	22	90	22	8
26 to 40 years	14	55	16	4
41 to 60 years	7	20	10	2
60 and above	3	6	5	1
	50	176	55	19

The influenza subtypes were defined and it was observed that during the outbreak almost every person from all age groups was affected with viral attack. The significant no of cases were from the age group starting 15 to 40 years who showed positivity of the virus in their diagnostics tests. Adults were more vulnerable during the epidemic, pre epidemic and post epidemic time. Following graph depict the clear picture of the viral attack in different age group.



The symptoms which were commonly observed during the influenza outbreak among the patients suffering from it were sore throat, fever, cough, dizziness, short of breadth and sometime diarrhea

Symptoms	H1N1pdm09	H1N1	H3N2	Type B
Sore throat	165			
Fever	170	50	6	3
Cough	5	30	10	20
Short of Breadth	10	5	1	
diarrhea		3		2
Dizziness			12	25



The patients who were H1N1pdm09 positive were complaining for sore throat and high fever as compared to other strains of influenza viral attack. Diarrhea was only observed in children and no complain in adults were found in the strain positive cases.

### DISCUSSIONS:

Flue is a season disease in Pakistan and routine testing of flue was not heard in Past .In the year 2017 the H1N1pdm09 which is a mutant form of swine flu found in the Punjab and it played havoc in South Punjab where mortality of the patients were also registered. The alarming issue has severe public health implications locally and also can be globally. When the mortality was observed in the season from November to March 2018 the flue like illness was considered as unusual. Mutation in the Swine flu has made it more vulnerable. Immunity to flu is high in those cases that have prior infection and our immune system has the ability to recognize the virus protein which entered earlier in our body. But if any mutation occurs the chances of severe illness and also death chances can be increased. The symptoms which remained common in flue were runny nose, cough, fever and tiredness. But if the virus of flu mutates even the health adults come at greater risk of adverse outcomes. So the flu outbreak should be treated seriously so that it should not get out of hands. Seasonal influenza remained in circulation during the winter season when temperature is low. This pattern was also observed in China, Vietnam, India, and Singapore and also in Thailand. Influenza virus is affected by temperature, climate change, and humidity and from solar radiation. Type A seasonal influenza H1N1/A and H3N2/A virus are present in different period of time but the peak activity of

H1N1pdm 09 was observed from the period of November to March and it has quick transmission due to coldness. Type B influenza virus remains in circulation throughout the year but it is not associated with the mortality and hospitalization. It was observed in Italy and Thailand by Esposit et al(5) and by Finkelman (4) that only younger children get hospitalized due to the flue and fever. It is clear from the literature review that pandemic viruses are considered vulnerable for children and young adults. People with low immunity and extreme age groups are more susceptible for the seasonal virus attacks as was described by the Ellis and Thompson C et a 2011(5).The study showed that the young adults were more prone to the attack of H1N1pdm09 virus during its outbreak and it severely affect the respiratory system of the patients.

### CONCLUSION:

The emergence of the Influenza virus should be taken as an opportunity to develop the system of surveillance and also to improve the existing health system. Frequent monitoring can help to identify the seasonal pattern and reduction strategies to decrease the burden of disease and its mortality. It will also help in prioritizing the areas for flue vaccination and the priority among vulnerable age group. Preventive and protective measures can help at individual level like wearing masks, avoiding contact with ill person, washing hands and by avoiding large public

gatherings during the outbreak. Awareness among the population can help to save the life of people by timely referring them to tertiary care hospital for better treatment and supervision.

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