PREVENTIVE AWARENESS ABOUT EPIDEMIC INFLUENZA - A DENTAL STUDENTS PERSPECTIVE ON CURRENT STATUS

Sheetal Kumari[1], Dr. L. Keerthi. Sasanka[2], Dr. Dinesh Premavathy[3] , Dr. Visalakshi Ramanadhan[4]

[1]*Saveetha Dental College and Hospitals,Saveetha Institute of Medical and Technical Sciences,Saveetha University,Chennai-77*
[2]*Assistant ProfessorDepartment of ProsthodonticsSaveetha Dental College and HospitalsSaveetha Institute of Medical and Technical Sciences,Saveetha University,Chennai-77*
[3]*Senior lecturer,Department of AnatomySaveetha Dental College and Hospitals,Saveetha Institute of Medical and Technical Sciences,Saveetha University,Chennai-77*
[4]*Assistant ProfessorDepartment of ProsthodonticsSaveetha Dental College and HospitalsSaveetha Institute of Medical and Technical Sciences,Saveetha University,Chennai-77*
[1]*151801098.sdc@saveetha.com*
[2]*keerthis.sdc@saveetha.com*
[3]*dineshp.sdc@saveetha.com*
[4]*visalakshirm@saveetha.com*

ABSTRACT :

Influenza is an infectious disease caused by Influenza virus. Symptoms may include- fever, cough, headache, sore throat muscle and body pain and fatigue. These symptoms begin two days after exposure to the virus and most last less than a week. Old age people and children are at great risk due to this virus. Complications of influenza may include viral Pneumonia , secondary bacterial pneumonia sinus infections and worsening of previous health problems such as asthma or heart failure. Influenza spreads around the world in yearly outbreaks, resulting in about three to five million cases of severe illness and about 290,000 to 650,000 deaths. Three of the four types of influenza viruses affect humans : Type A, Type B, and Type C. Type D has not been known to infect humans, but is believed to have the potential to do so. In this present study, data was collected and was verified using a standard software. Statistical analysis was done with the help of SPSS software and representation was done using pie charts and graphs. Data was entered and verified using a standard computer software. Type of analysis used was chi square. It was concluded that a maximum number of awareness was shared about the influenza, its causes, symptoms and risk factors associated with it.

Keywords : Epidemic influenza, pandemic, viral infections, medications, social distancing, proper hygiene, sanitisation.

INTRODUCTION :

Epidemic Influenza is commonly known as the flu, is an infectious disease caused by an influenza virus. Symptoms can be mild to severe. The most common symptoms include high fever, running nose, sore throat, muscle and joint pain, headache, coughing and feeling tired.(Chen *et al.*, 2017) These symptoms typically begin two days after exposure to the virus and most last less than a week. The cough however may last for more than 2 weeks.(Wang *et al.*, 2017) In children there may be diarrhea and vomiting, but these are not common in adults. Diarrhea and vomiting occur more commonly in gastroenteritis which is

an unrelated disease and sometimes in - accurately referred to as "stomach flu" or the "24 hour flu". (Casalegno *et al.*, 2017)

Complications of influenza may include viral Pneumonia , secondary bacterial pneumonia sinus infections and worsening of previous health problems such as asthma or heart failure. Three of the four types of influenza viruses affect humans : Type A, Type B, and Type C. Type D has not been known to infect humans, but is believed to have the potential to do so. (Iuliano *et al.*, 2017) Usually, the virus is spread through air from coughs or sneezes. This is believed to occur mostly over relatively short distances contaminated by the virus and then touching the eyes, nose or mouth. (Lu *et al.*, 2019) A person may be infectious to others both before and during the time they are showing symptoms. The infection may be confirmed by testing the throat, sputum or nose for the virus. A number of rapid tests are available however people may still have the infection even if the results are negative. A type of polymerase chain reaction that detects the virus RNA is more accurate.(van Baalen *et al.*, 2017)

Frequent hand washing reduces the risk of viral spread, as does wearing a surgical mask. Yearly vaccinations against influenza are recommended by the World Health Organization (WHO) for those at high risk and by the centers for disease control and prevention for those six months of age and older. (Skowronski *et al.*, 2019)The vaccine is usually effective against three or four types of influenza. It is usually well tolerated. A vaccine made for one year may not be useful in the following year, since the virus evolves rapidly.(Lurie *et al.*, 2020) Antiviral medications such as the neuraminidase inhibitor oseltamivir, among others, have been used to treat influenza. The benefit of antiviral medications in those who are otherwise healthy do not appear to be greater than their risks. No benefit has been found in those with other health problems.(Shiraki and Daikoku, 2020)

Influenza spreads around the world in yearly outbreaks, resulting in about three to five million cases of severe illness and about 290,000 to 650,000 deaths. About 20% of unvaccinated children and 10% of unvaccinated adults are infected each year. In the northern and southern parts of the world, outbreaks occur mainly in the winter, while around the equator outbreaks may occur at any time of the year.(Zecchin *et al.*, 2019)

Death occurs mostly in high risk groups - the young, the old and those with other health problems. Larger outbreaks known as pandemics are less frequent. In the 20th century, three influenza pandemics occurred : Spanish influenza in 1918, Asian influenza in 1957, and Hong Kong influenza in 1968. The World Health Organization declared an outbreak of a new type of influenza A/HN1 to be a pandemic in June 2009. Influenza may also affect other animals, including pigs, horses and birds.(Topoulos *et al.*, 2019)

Aim : The main aim or objective of this present study is to spread awareness about epidemic influenza and its relation with a pandemic. The study also aims at highlighting some points about the mortality rate and high risk factors of epidemic influenza among dental students.

MATERIALS AND METHODS :

The present study is a survey based study. Minimum number of participants included was minimum 100. Participants who all took part in this survey were from different Private Dental Colleges in Chennai. The study design was patterned in an Interventional Non- Controlled form. Questionnaires were prepared. Sample size was 100. Method used was stratified random sampling. Data was collected and was entered and verified with the help of standard computer software. Double entry method was used to enter the data which was collected. Total number of questions were 10 and were represented using pie charts and graphs. Statistical analysis was done with the help of SPSS software. (Jyothi *et al.*, 2017) , (Ganapathy, 2016) , (Jain, Ranganathan and Ganapathy, 2017) , (Ashok and Suvitha, 2016) , (Ajay *et al.*, 2017) Answers were distributed as percentage. Type of analysis used was Chi square. Independent variables were name, age and gender. Dependent variable was epidemic influenza and its mortality rate.

RESULTS AND DISCUSSION :

Present survey has a total population of 100. So among 100 participants, 65% of participants were aware of epidemic influenza and remaining 35% of participants were not aware of epidemic influenza.

Epidemic influenza is a deadly influenza pandemic which is caused due to H1N1 influenza virus. It is estimated that 500 million people or one -third of the world's population was infected with this virus. Symptoms may include - fever, cough, sore throat, headache, muscle or body ache, running nose and fatigue. Vaccination coverage has been increased for persons who have high risk conditions i.e; old age people who all are more than 65 years old and children are at high risk. During an influenza pandemic, antiviral drugs are an important tool to treat and prevent the spread of influenza illness. Antiviral drugs are medicines that fight against influenza viruses.

In the present study we have seen that in figure 1, among the total population only (65%) of the participants belong to the age group 18-20 years and the remaining (35%) of the participants belong to the age group 20-24 years. In figure 2, among the total population, (74%) of the participants are females whereas the remaining (26%) are males. In figure 3, among the total population, (46%) of the participants are from 1st year, (33%) of the participants are from 2nd year, (11%) of the participants are from 3rd year and the remaining (9%) of the participants are from the final year. In figure 4, among the total population, (64.5%) of the participants agree with the fact that there are vaccines available for influenza viruses, (16.1%) of the participants do not agree with this fact and (19.4%) of the participants are not sure about it. In figure 4.1, the bar chart shows association of the vaccines available for influenza virus with the gender, P-value = 0.203(>0.05), hence statistically not significant. In figure 5, among the total population, (54%) of the participants think that people fall ill at normal conditions due to lack of immunity, (34%) of the participants think that it is due to poor hygiene and (12%) of the participants think that it is due to both lack of immunity as well as poor hygiene. In figure 5.1, the bar chart shows association of the people falling ill at normal conditions with the gender, P-value = 0.000, hence statistically significant. In figure 6, among the total population, (54%) of the participants think that lack of immunity can increase the flu symptoms, (37%) of the participants think it is due to the poor hygiene and (9%) of the participants have lack of awareness. In figure 6.1, the bar chart shows association of the factors that increase the risk of flu symptoms with gender, P-value = 0.069(>0.05), hence statistically not significant. In figure 7, among the total population, (74%) of the participants agree that one must maintain social distancing incase of common cold, (15.5%) of the participants agree that one must wear masks and sanitise themselves in case of common cold and (10.5%) of the participants agree that one must take proper medicines incase of common cold. In figure 7.1, the bar chart shows association of the precautions that one must take incase of common cold with the gender, P-value = 0.158 (>0.05), hence statistically not significant. In figure 8, among the total population, (64%) of the participants agree to the fact that influenza can lead to a pandemic situation, (23%) of the participants are not sure about this fact and (13%) of the participants disagree to this fact. In figure 8.1, the bar chart shows association of the influenza that can lead to a pandemic situation with the gender, P-value = 0.203 (>0.05), hence statistically not significant. The present study has initiated by reviewing from previous studies, where investigations were done based on clinical reports, interventional studies (Jyothi *et al.*, 2017) , (Ashok *et al.*, 2014), (Venugopalan *et al.*, 2014) in vitro studies (Duraisamy *et al.*, 2019), (Ganapathy, 2016) , (Jain, Ranganathan and Ganapathy, 2017) , (Ajay *et al.*, 2017) and systemic reviews (Ariga *et al.*, 2018), (Selvan and Ganapathy, 2016) , (Subasree, Murthykumar and Dhanraj, 2016) , (Vijayalakshmi and Ganapathy, 2016) , (Ganapathy, Kannan and Venugopalan, 2017) , (Kannan and Venugopalan, 2018) thus now we are focussing on epidemiological surveys. The idea for this survey stemmed from the current interest in our community.

Limitations : Epidemic influenza increases the mortality rate. Only antiviral drugs can be used for the treatment of epidemic influenza. Development of vaccines for some viruses are not yet established.

Future Scope : The main objective of this study is to spread awareness among dental students about the epidemic influenza, it causes the symptoms and also high risk factor associated with it.

CONCLUSION :

Within the limitations of this study following conclusions can be drawn, Most of the dental students are aware about the epidemic influenza with a current pandemic situation and also its causative factors, symptoms and high risk factors associated with it. This study has shown that there is no affiliation with the gender and the awareness about the Influenza Epidemic. Proper hygiene and maintaining social distancing are some precautionary measures that one must take to safeguard themselves from such viral infections.

Conflict of interest : No potential conflict of interest relevant to this article was reported.

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GRAPHS
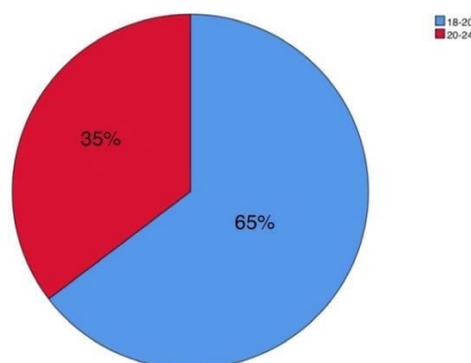
Figure 1 : The above piechart shows the responses to the different age group categories. Among the total population, 65% of the participants belong to the 18-20 years of age group category and the remaining 35% of the participants belong to the 20-24 years of age group category
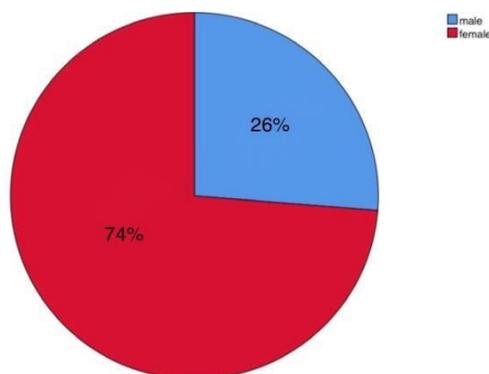
Figure 2 : The above piechart shows the responses to gender. Among the total population, 74% of the participants are Female and the remaining 26% of the participants are males.
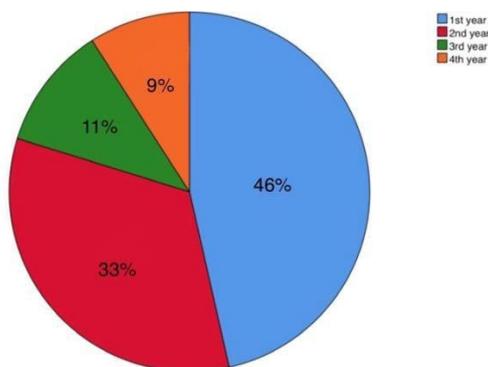
Figure 3 : The above pie chart shows responses to the year of study. Among the total population, 46% of the participants are from 1st year, 33% of the participants are from 2nd year, 11% of the participants are from 3rd year and the remaining 9% of the participants are from 4th year i.e, the final ye
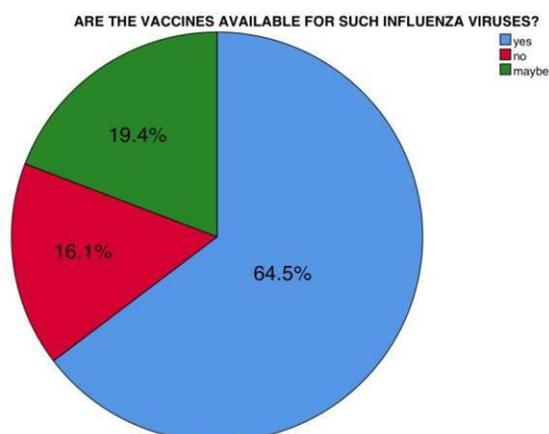
Figure 4 : The above pie chart shows the responses for the vaccines available for influenza viruses. Among the total population , 64.5% of participants agree to the fact that there are vaccines available for influenza viruses, 16.1% of participants do not agree with this fact and 19.4% of participants are not sure about it.
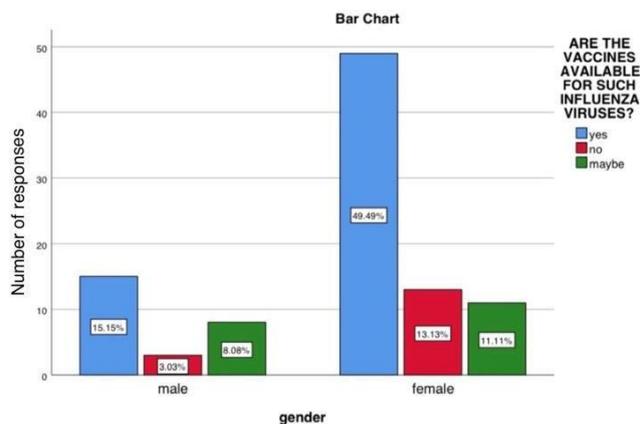
Figure 4.1 : The above bar chart shows the association of the vaccines available for influenza virus with the gender. X-axis denotes the gender i.e, male and female and Y-axis denotes the number of responses. (Blue) Yes, (Red) No, (Green) Maybe; Pearson's Chi Square test was done, ChiSquare value: 3.139, df: 2, P- value = 0.203 (>0.05), hence statistically not significant. Although not significant, the majority of females (49.49%) are aware that the vaccines that are available for Influenza rather than males.
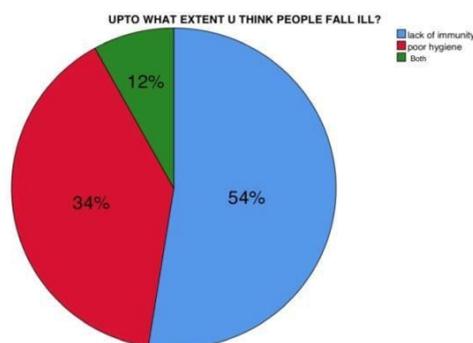
Figure 5 : The above pie chart shows responses for the people who frequently fall ill at normal conditions. Among the total population, 54% of the participants think that it is due to lack of immunity, 34% of the participants think that it is due to poor hygiene and 12% of the participants think it is due to both lack of immunity and poor hygiene.
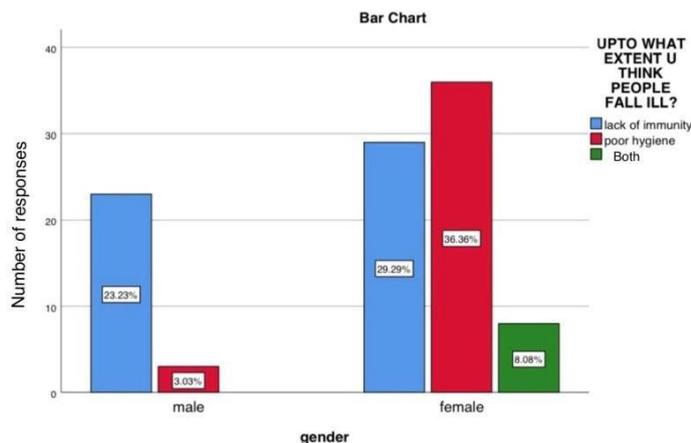
Figure 5.1 : The above bar chart shows association of the people falling ill at normal conditions with the gender. X-axis denotes the gender i.e, male and female and Y-axis denotes the number of responses. (Blue) lack of immunity, (Red) poor hygiene, (Green) both ; Pearson's Chi Square test was done, ChiSquare value : 18.464, df : 2 , P-value : 0.000 (<0.05), hence statistically significant. This proves that the majority of females are more aware about the conditions which can be a causative factor for illness.
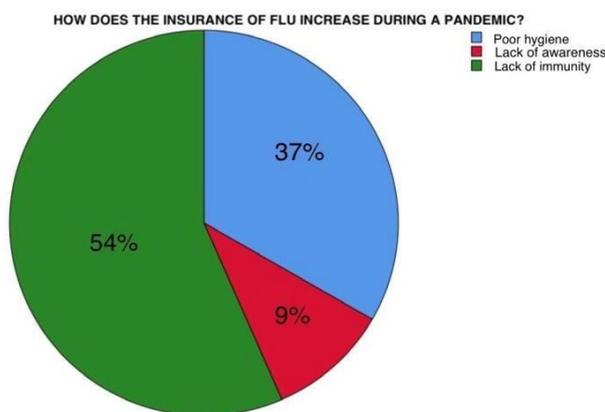
Figure 6 : The above pie chart shows responses for factors that may increase the risk for flu symptoms. Among the total populations, 54% of the participants think it is due to lack of immunity , 37% of the participants think it is due to poor hygiene and 9% of the participants have lack of awareness.
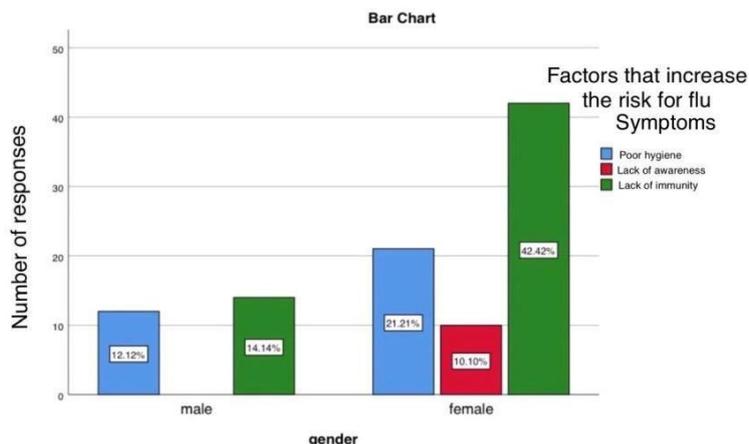
Figure 6.1 : The above bar chart shows the association of the factors that increase the risk of flu symptoms with the gender. X-axis denotes the gender i.e, male and female and Y-axis denotes the number of responses. (Blue) Poor hygiene, (red) Lack of awareness, (Green) Lack of immunity. Association was tested by Pearson's chi Square test, Chi Square Value: 5.346 , df : 2, P value = 0.069 (>0.05) hence statistically not significant. Although not significant, the majority of females, about (74%) are aware of the
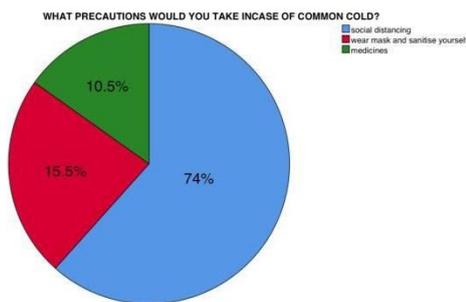
factors that increase the risk for flu sym   ptoms rather than males.

Figure 7 : The Given pie chart shows the responses for the precautions that one must take incase of a common cold. Among the total population, 74% of participants agree to social distancing, 15.5% of the participants agree to wear masks and sanitise themselves and 10.5% of the participants agree to take proper medicines.
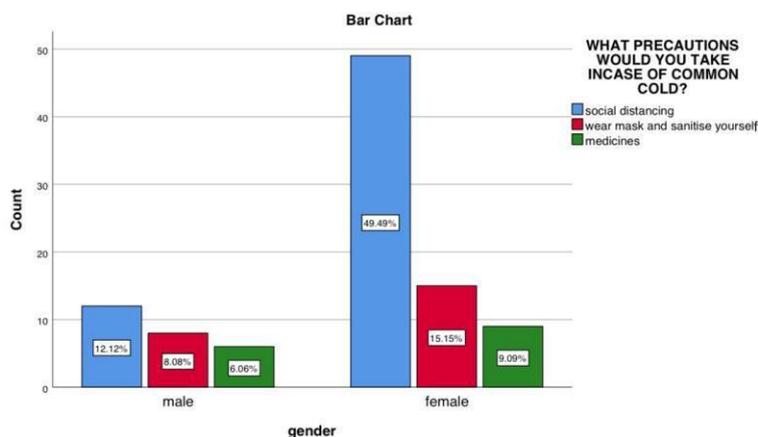
Figure 7.1 : The given bar chart shows association of the precautions that one must take incase of a common cold with the gender. X-axis denotes the gender i.e, male and female and Y-axis denotes the number of responses. (Blue) social distancing, (Red) wear mask and sanitise yourself, (Green) medicines ; Association was tested by Pearson's chi Square test, Chi Square Value: 3.692 , Df :2, P value = 0.158 (>0.05) hence statistically not significant. Although not significant, the majority of females (49.49%) are aware of the precautions that one must take incase of common cold rather than males.
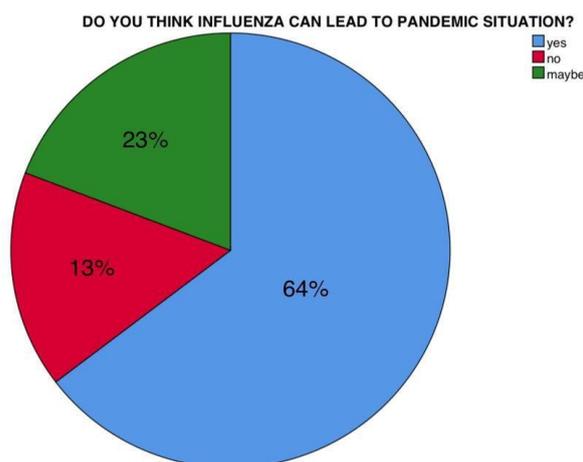
Figure 8 : Given pie chart shows responses to Influenza that can lead to a pandemic situation. Among the total population, 64% of participants agree to the fact that influenza can lead to a pandemic situation, whereas 23% of participants are not sure about this fact and 13% of the participants disagree to this fact.
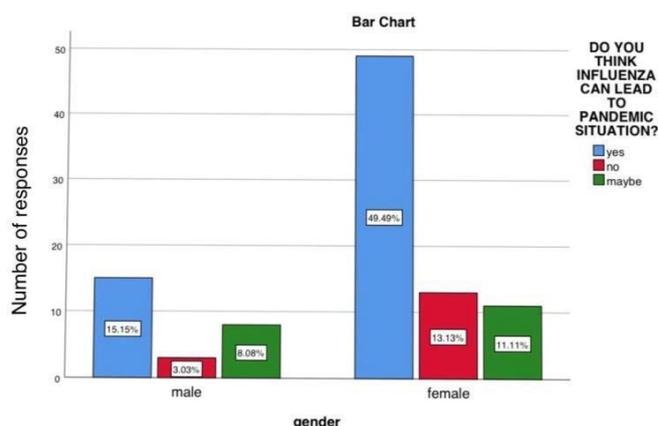
Figure 8.1 : The given bar chart shows the association of influenza that can lead to a pandemic situation with the gender. X-axis denotes the gender i.e, male and female and Y-axis denotes the number of responses. (Blue) yes, (Red) no, (Green) maybe ; Association was tested by Pearson's chi Square test, Chi Square Value: 3.193 , Df : 2, P value = 0.203 (>0.05) hence statistically not significant. Although not significant, the majority of females (49.49%) are aware of the influenza that can lead to pandemic situations rather than males.