AWARENESS ON EMERGING VIRUSES ACROSS THE GLOBE AMONG COLLEGE STUDENTS IN ANDHRA PRADESH

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ABSTRACT: The term emerging virus was coined by scientists in the 1990s to describe the agent of a new or previously unrecognized infection. The term implies that emerging viruses are new; however this assumption is incorrect. New virus infections have been emerging for thousands of years, at least since the rise of agriculture 11,000 years ago. The development of agriculture and commerce provided the large populations needed to sustain human infections such as measles and smallpox.An infection is the littlest sort of parasite to exist, typically running from 0.02 to 0.3µm in size, albeit some infections can be as extensive as 1µm. A viral particle or virion contains a single nucleic acid (RNA or DNA) core surrounded by a protein coat and sometimes enzymes that are required to initiate viral replication. Viruses can only replicate within the cells of animals, plants, and bacteria and, as such, are referred to as obligate intracellular parasites.Infections are not characterized by the diseases they cause; rather, they are gathered into various families dependent on whether the nucleic corrosive is single-or twofold abandoned, regardless of whether a viral envelope is available and their method of replication.

KEYWORDS: coronavirus; Hantavirus; swine influenza; zika virus; zoonosis

INTRODUCTION:

In recent decades the major issues are emerging . And re-emerging virusesIt is important to accumulate knowledge through appropriate research and by monitoring these emerging viruses. Zoonosis (Calisher *et al.*, 2006). Are the major emerging pathogens in humans. (Genersch and Aubert, 2010; Dubov, Appleton and Campbell, 2016)The virus is mainly aims at maximising inversion rate, selecting the host, ensuring timely replication and transmission.The swine flu pandemic which occurred in 2009 Killed over 40 million people in Spain.(Dallmeier and Neyts, 2016) Viruses probably (although we do not know for sure) appeared when living cells evolved, possibly even before. They subsequently infected multicellular forms of life and then mammals, which were present on the globe before humans. Humans then acquired virus infections from

animals (an infection transmitted from animals to humans is a zoonosis(‘Emerging Influenza Viruses at Risk in Global Health’, 2016; Aldrich, 2016; Liu and Saif, 2020). At some point the number of virus genomes and virion structures became established, and for the next millions of years, viruses evolved. It is unlikely that new viruses emerge de novo; rather they evolve from existing viruses.(Meng, 2012; McNeil, 2016; Chen *et al.*, 2020)While many are very specific about which host species or tissue they are attacking, each virus species relies on a particular method of copying itself. Vegetable viruses are also transmitted by insects and other animals, called vectors, from plant to plant. Many human and other animal viruses are transmitted by exposure to contaminated body fluids. Cough or maybe sneeze. Some examples serve to illustrate the origins of viruses. Comparisons of genome sequences of today’s members of the herpesvirus family has led to the suggestion that these viruses arose 180-220 million years ago, possibly from ancestors of similar viruses that infect oysters and fish today. (Wacharapluesadee *et al.*, 2005; Kamorudeen and Adedokun, 2020)Smallpox virus may have emerged after an infection of humans with a gerbil poxvirus. Measles virus may have originated from infection of humans with an ancestor of a virus that today infects cows, rinderpest virus. It has been suggested that the virus ‘jumped’ from cows to humans about 5,000 years ago, when humans first began to domesticate cattle. (Li *et al.*, 2005; Office and Viruses Editorial Office Viruses Editorial Office, 2020)Measles virus then spread throughout the Middle East and was then brought to the Americas by colonization and migration, where it had lethal effects on the Native Americans.

Zika is another endemic in Africa and Southeast Asia in 2007.(Arora, 2020) In 2015 Zika virus was detected in Brazil leading to transmission of virus.(Samuel and Devi, 2015); Baheerati and Gayatri Devi, 2018; Aziz *et al.*, 2020) Ebola is also one of the major emerging acute respiratory syndrome in East Asia.Recently there is an another pandemic outbreak called coronavirus ,which spreads through different countries through contaminated droplets of the infected person to the other person. The drawbacks of the pandemic and and weak outbreak are they lead to several loss of human life, economic crisis ,increase in the death rate. (Harsha *et al.*, 2015; Rj and R, 2016). Previous research in obesity (Fathima and Preetha, 2016) Many online research are done like study about adenoids by oronasal and nasal spirometry which creates awareness for the person doing this and it's helpful for the students (R and Sethu, 2018). In our college many researchers (Timothy, Gayatri Devi and Jothi Priya, 2019; Swathy and Gowri Sethu, 2015a; Swathy and Gowri Sethu, 2015b; Renuka and Sethu, 2015) brought interest in doing the present study. The aim of the study is to bring awareness in the emerging and re emerging viruses across the globe.

MATERIALS AND METHODS:

This is a cross-sectional Survey among 20 to 25 years of students. A well structured questionnaire was prepared and circulated among homogeneous college students of both male and female. the survey was conducted online and were circulated among 100 college students in Andhra Pradesh.Wang shick Ryu has also conducted the similar study in 2017 among 596 members.Anne monette had also conducted the survey on knowledge among of the emerging viruses among

undergraduates in 2016.(Dave and Preetha, 2016; Abigail *et al.*, 2019; David *et al.*, 2019). To minimise the sampling bias we should avoid Errors in the questions and avoid reading questions. This survey consists of 15 self structured questions. The data was collected and statistically analysed in SPSS. Chi-Square analysis was performed and $p<0.05$ was considered as statistically significant.

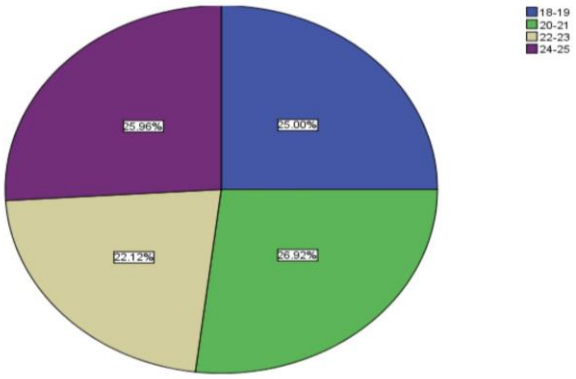

Fig 1: Pie Chart showing percentage distribution on the age of the students . 25.96% belong to 24-25 years (purple), 26.92% belong to 20-21years (green), 25% belong to 18-19 years (blue), 22.12% belong to 22-23years (yellow).

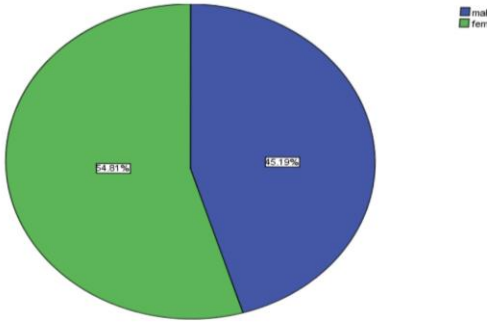

Fig 2 : Pie Chart showing percentage distribution on the the gender of the study population.54.81% male (blue) and 45.19% female (green)

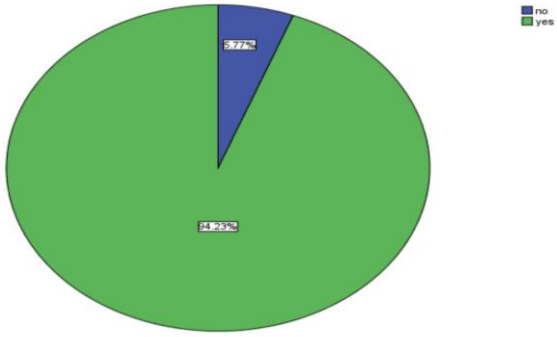

Fig 3 :Pie chart showing percentage distribution on the awareness of covid-19 . 94.23 % responded yes (green) and 5.77 % responded no (blue).

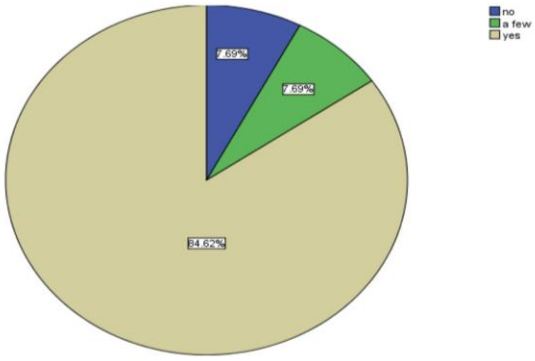

Fig 4 **:** Pie chart showing percentage distribution on the awareness of precautions that should be taken during the covid-19. 84.62% responded yes (yellow),7.69 % responded no (blue) and 7.69 % responded partial awareness (green).

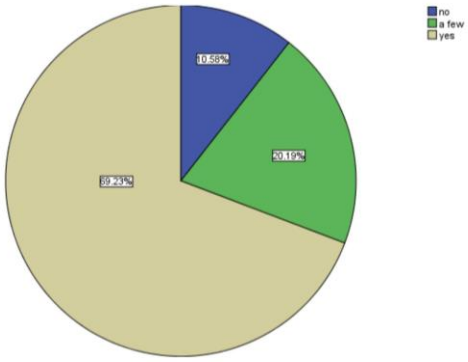

Fig 5: Pie chart showing percentage distribution on the awareness of many emerging viruses across the globe. 69.23 % responded yes (yellow), 20.19 % responded partial (green) and 10.58 % responded no (blue).

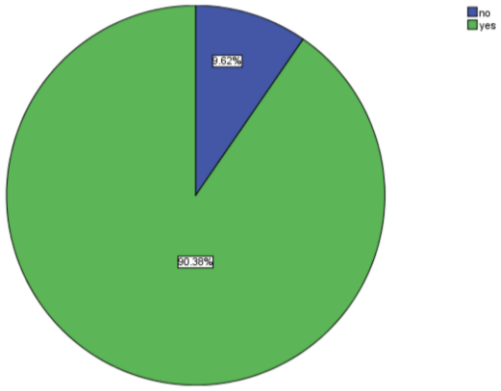

Fig 6 :Pie chart showing percentage distribution shows the awareness of the ebola virus outbreak. 90.38% responded yes (green),9.62 % responded no (blue).

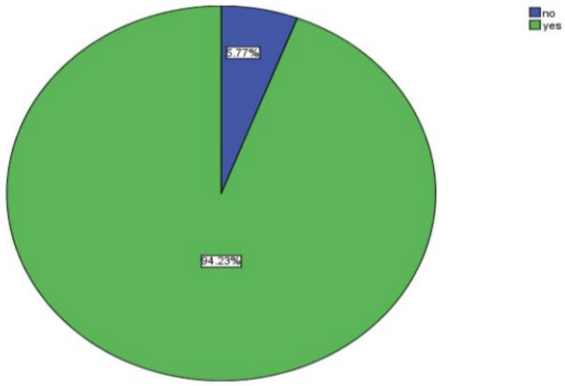

Fig 7: Pie chart showing percentage distribution on the awareness of swine flu outbreak . 94.23% responded yes (green) and 5.77% responded no (blue).

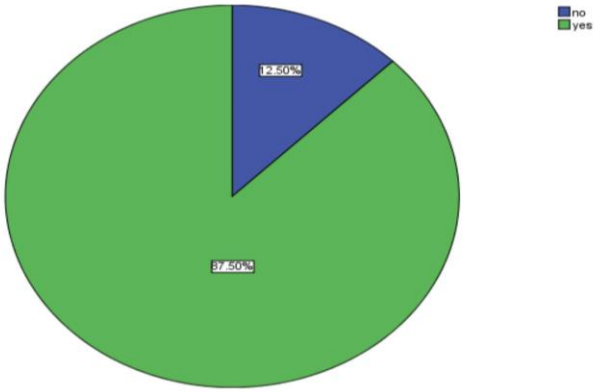

Fig 8: Pie chart showing percentage distribution on the awareness of SARS virus . 87.50% responded yes (green) and 12.50 % responded no (blue)

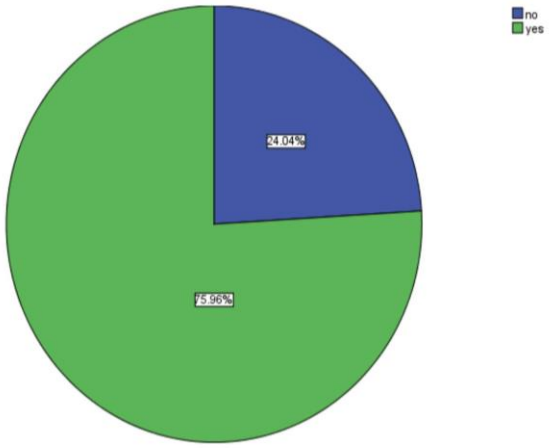

Fig 9: Pie chart showing percentage distribution of awareness of HANTA virus .75.96 % responded yes (green), 24.04 % responded no (blue).

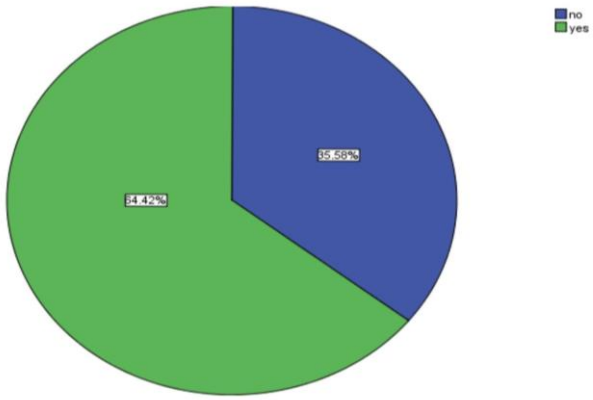

Fig 10: Pie chart showing percentage distribution on the awareness of ZIKA virus .75.96 % responded yes (green), 24.02 % responded no (blue).

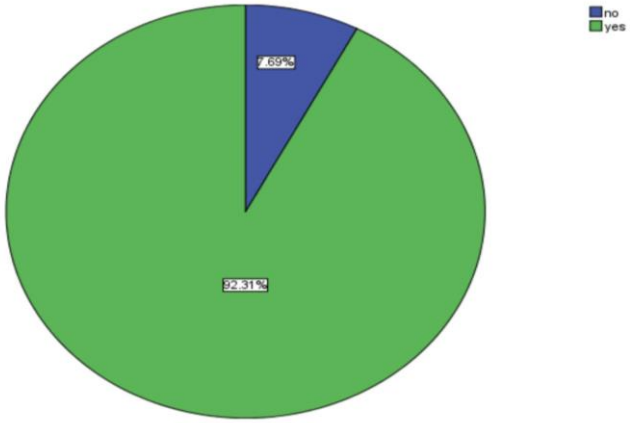

Fig 11: Pie chart showing percentage distribution on the awareness of the RABIES virus . 54.42%

responded yes (green) and 35.58 % responded no (blue).

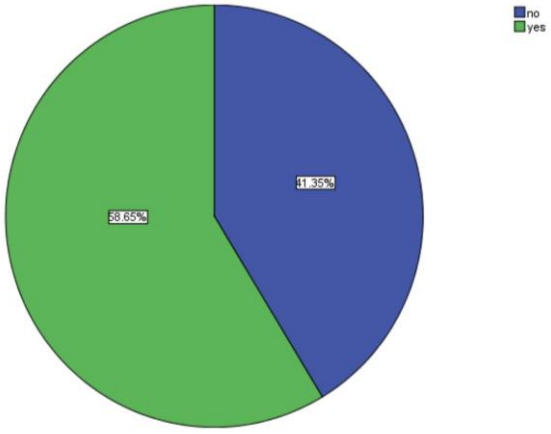

Fig 12: Pie chart showing percentage distribution on the awareness of NIPAH virus. 58.65 % responded yes (green) and 42.35 % responded no (blue).

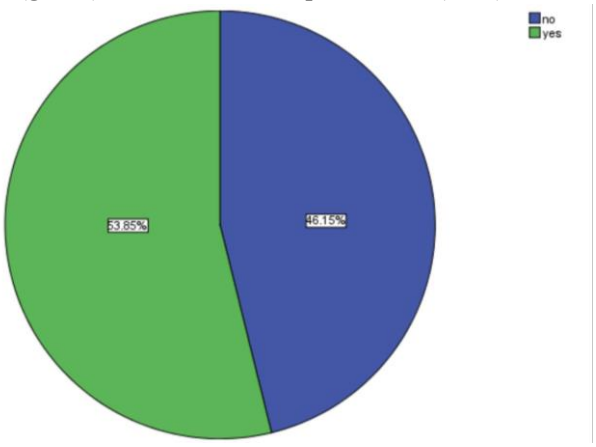

Fig 13: Pie chart showing percentage distribution on the awareness of the TOSPO virus. 53.85% responded yes (green) and 46.15 % responded no (blue).

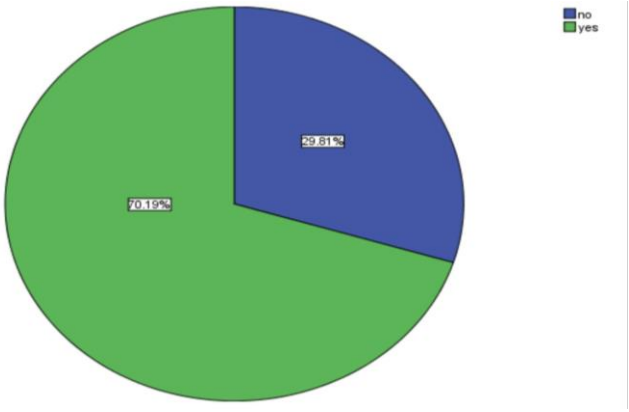

Fig 14: Pie chart showing percentage distribution on the awareness of ROTAvirus . 70.19 % responded yes (green) and 29.81 % responded no (blue)

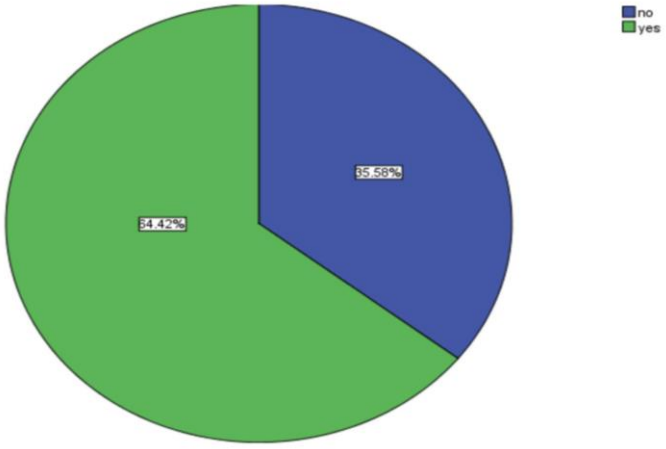

Fig 15: Pie chart showing percentage distribution on the awareness of the precautions taken during any pandemic outbreak . 64.42 % responded yes (green) and 35.58 % responded no (blue).

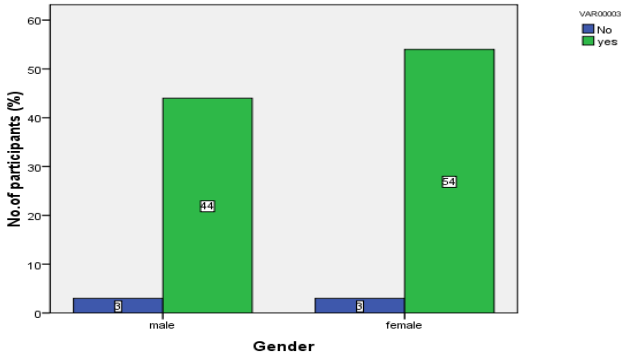

Fig 16: Bar graph represents the association between gender and awareness of coronavirus. X axis represents the gender and Y axis represents the No.of participants. In this bar graph, Green colour denotes Yes and Blue colour denotes No. Majority (54 participants) were more aware about coronavirus than males. However the difference is not statistically significant, (pearson's chi square value: 0.059, (p value=0.807) (>0.05), (Statistically not significant),proving females have better awarmes than males.

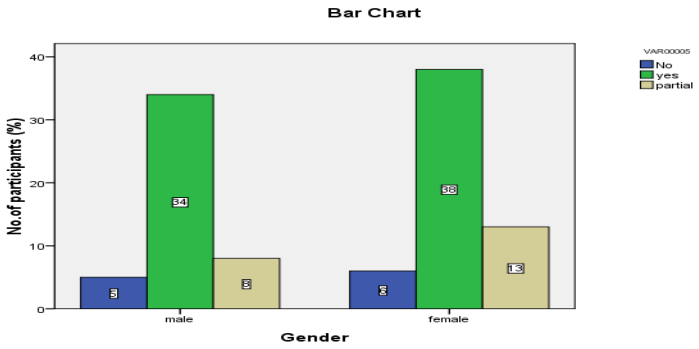

Fig 17: Bar Graph represents the association between gender and the awareness of emerging viruses across the globe. X axis represents the gender and the y axis represents the no.of participants of which green indicates yes, blue indicates no and beige indicates partial awareness. Majority of the female participants (38 participants) are more aware about the many emerging viruses across the globe than males. However the difference is not statistically significant, Pearson's chi square value - 0.547,
p value=0.761) (>0.05), hence Statistically not significant.

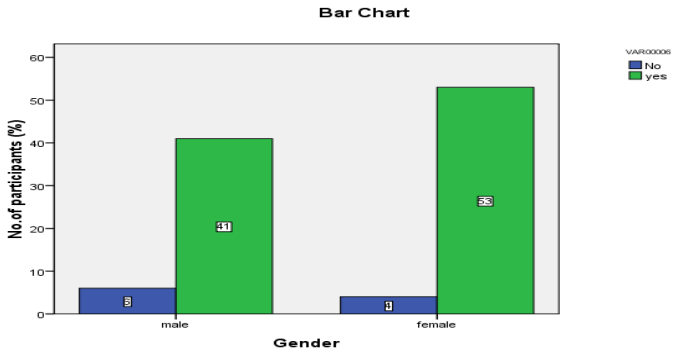

Fig 18: Bar graph represents the association between gender and awareness of Ebola virus. X axis represents the gender and the Y axis represents the no.of participants of which green colour indicates yes and blue colour indicates no. Majority of the females (53 participants) are having more awareness about the Ebola virus than the male participants. However the difference is not statistically significant, pearson's chi square value - 0.979, p value =0.322) (>0.005), hence Statistically not significant.

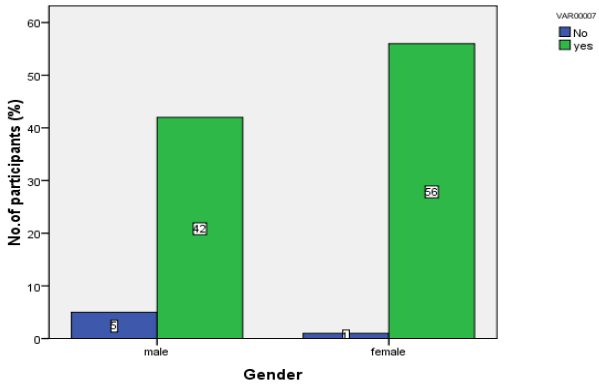

Fig 19: Bar graph showing the association between the gender and the awareness on the outbreak of swine flu. X axis represents the age and the y axis represents the no.of participants of which green indicates yes and blue indicates no. Majority of the females (56 participants) are more aware about the swine flu pandemic more than males. However the difference is not statistically significant,
chi square value - 3.740, p value - 0.053 (>0.05), hence statistically not significant.

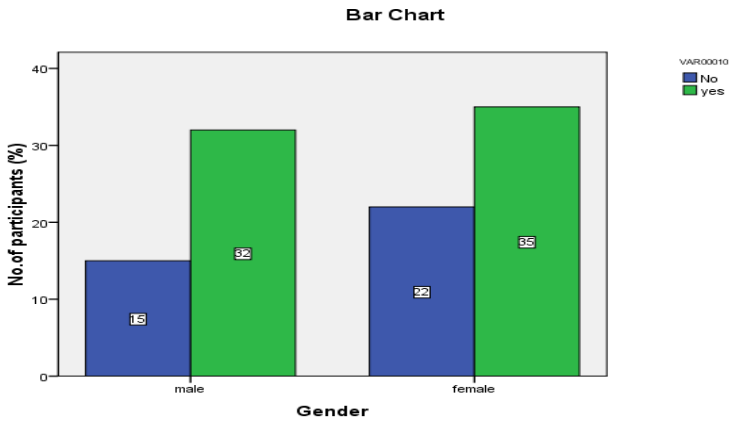

Fig 20: Bar graph represents the association between the gender and the awareness of ZIKA virus. X axis represents the gender and the y axis represents the no.of participants of which green indicates yes and blue indicates no. Majority of the females (35 participants) are more aware about the ZIKA virus than males. However the difference is not statistically significant, pearson's chi square value - 0.502,
p value - 0.479) (>0.05), hence statistically not significant.

RESULTS AND DISCUSSION:

From the collected data we can acknowledge that they have moderate knowledge about the emerging viruses across the globe. They are moderately aware of the precautions that should be taken in any panic outbreak. The first graph shows the age groups of the study population. (figure 1) 54.8% of male and 45.2% of females in the study population. (figure 2) . 94.2% are ever of the covid 19 (figure 3). 84.6% of the study population are ever of the precautions taken for coronavirus (figure 4) . 69.2% are a way that many more emerging viruses are there across the globe (figure 5).90.4% of the study population are a bed of the Ebola virus (figure 6). 94.2% of the study population are aware of the Swine flu pandemic outbreak (figure 7). 87.5% of the study population are aware of the SARS virus (figure 8).76% are ever of the Hantavirus (figure 9). 64.4% of the study population Are aware of the ZIKA virus. (Figure 10). 92.3% of the study participants are aware of the rabbit virus (figure 11). 58.7% had ever had the NIPAH virus (figure 12). 53.8% of the study population are aware of TOSPOvirus (Figure 13). 70.2% of the study participants are aware that the Rotavirus is (Figure 14). 64.4% are aware of the precautions to check be taken for any panic outbreak (figure 15).

Figure 16 represents the association between gender and the awareness of coronavirus.

Figure 17 represents the association between the gender and awareness of emerging viruses across the globe. Figure 18 represents association between gender and awareness of the outbreak of Ebola virus. Figure 19 represents the association between gender and awareness on the outbreak of swine flu. Figure 20 represents the association between the gender and awareness of Zika virus.

This study assessed knowledge and attitudes towards various emerging viruses across the globe .Participants aged 18-25 were recruited from three different colleges in chennai .The majority of

participants had little awareness of emerging viruses .These findings are in accordance with previous UK-based studies which have demonstrated that people generally have a moderate knowledge about the emerging viruses. There is a need for more educational intervention in order to raise awareness.

In my present study 94.2% are aware of the Karana bar is where compare to previous study conducted by wang shick ryu in 2017.(Choudhari and Jothipriya, 2016; Shruthi and Preetha, 2018; Iyer, Gayatri Devi and Jothi Priya, 2019). In this study 90.4% are aware of the Ebola virus where in the similar study conducted by Camilla rothe in 2017 97% are away or ebola virus.(R and Sethu, 2018).

The limitations of the study will be Survey fatigue, Homogeneous populations,in-line survey. The future scope of the study, it will bring awareness among many more emerging viruses across the globe and it also shows the knowledge, attitude, perception and the precautions that should be taken.

CONCLUSION:

From the above analytical results we can conclude that the students have a moderate knowledge about the precautions taken during the pandemic outbreak. Hence there is a need to bring awareness among the emerging viruses across the globe. Study of the emerging viruses has already led to a large amount of useful information. A wide variety of pathogenic mechanisms have been uncovered, highlighting the diverse impact that retroviruses can have on their hosts. Some pathogenic strains cannot be grown in vitro, making analyses of these agents extremely difficult.There are hundreds of coronaviruses, most of which circulate in animals. Only seven of these viruses infect humans and four of them cause symptoms of the common cold. But, three times in the last 20 years, a coronavirus has jumped from animals to humans to cause severe disease.SARS, a beta coronavirus emerged in 2002 and was controlled mainly by aggressive public health measures. There have been no new cases since 2004. MERS emerged in 2012, still exists in camels, and can infect people who have close contact with them.

AUTHORS CONTRIBUTION :

Structuring, study design final approval of manuscript was done by jothi priya, Collection of reviews,drafting of manuscripts was done by lasya.G, revision and proofreading of manuscripts and was done by lavanya prathap

CONFLICT OF INTEREST:

The author declares that there was no conflict of interest in the present study.

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