Knowledge, Attitude and Practice on Prevention of Airborne and Droplet Infections During the Outbreak of Corona Virus among the College Students in University of Bisha, Saudi Arabia

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ABSTRACT

Background: Infection with Coronaviruses can cause severe disease resulting in high mortality. Coronavirus has proven the ability to transmit between humans and animals. Around 35% of reported patients with MERS-Coronavirus infection have died.

Objective: To determine the knowledge, attitude, and practice (KAP) on prevention of Coronavirus infection amongst the college students in the University of Bisha, Saudi Arabia.

Methods: The Cross-sectional study conducted, in which 100 students representing from different female colleges. The data were collected by using questionnaires prepared by the researchers.

The results: Out of 100 participants, 20 % of the students having Average knowledge, 52% Good knowledge and 28% of them with excellent knowledge. Attitude level of the students was 19% Average attitude, 37 % Good attitude and 44 % of them with excellent attitude. Practice level of the students was 18 % Average Practice, 34 % Good Practice and 48% of them with Excellent Practice. Social media was the main source information about Coronavirus with 67%. However, Health science students have better KAP than science and arts students do which is statistically significant at P < 0.05 level. The study shows that Knowledge, Attitude and Practice were positively correlated and significant at the 0.01 level.

Conclusion: The study showed that participants have a good knowledge, attitude, and practice toward prevention of Coronavirus. The outcome of this study highlights the need for widespread awareness campaigns about prevention of airborne and droplet infections and new emerging diseases to public through posters, television, and healthcare professionals for the people who are not using with internet and social media.

Key words: Airborne–College students–Corona Virus–Droplet–Infection–Outbreak.

1 INTRODUCTION:

Coronaviruses (CoV) are a large family of viruses that cause diseases from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome (SARS-CoV). A novel coronavirus (nCoV) is a new strain that is not identified in humans earlier. CoV is zoonotic, sense they are transmitted between animals and people. A thorough study found that SARS-CoV was transmitted from civet cats to humans and the MERS-CoV from dromedary camels to humans. [1] A mysterious outbreak of unusual pneumonia in late 2019 was traced to a seafood wholesale market in Wuhan of China. Within a few weeks, a novel coronavirus tentatively termed as 2019 novel coronavirus (2019-nCoV) and the World Health Organization announced it. [2] (2) “Coronavirus” refers to the family of viruses that the disease belongs to and named for its crown-like shapes under a
microscope. “2019” refers to the year it was first identified. The point that it took weeks for global health executives to settle on what to call an illness that has already infected more than 64,000 people and killed more than 1,300. [3]

There are MERS cases reported by MOH Saudi Arabia from Alniayriyah, Makkah, and Hafr AlBatin by Feb 2020. [4] By the month of November 2019, 10 additional cases of MERS-CoV infection and one death. The cases were reported from Riyadh, Medina, Al-Qassim, Assir, Taif, and Makkah regions. [5] From 2012 to November 2019, 2494 laboratory-confirmed cases of MERS-CoV and 858 associated deaths were reported globally to WHO under the International Health regulations. [6]

The original study examined data of 72,314 patients, 44,672 of confirmed cases of the virus (61.8%), along with 10,567 clinically diagnosed cases (14.6%) and 16,186 assumed cases (22.4%). Including 889 cases examined did not show any symptoms. " Clinically diagnosed cases," are patients who reveal all the symptoms of Covid-19. On the 44,672 confirmed cases, the Chinese CDC said there were 1,023 deaths, a crude mortality rate of 2.3%. When comparing, SARS had a mortality rate of 9.6% during the 2003 outbreak, while MERS has a case fatality of 35%. "In about 14% of cases, the virus causes severe diseases like pneumonia and shortness of breath. And about 5% of patients have critical diseases with respiratory failure, septic shock and multi organ failure," he said. "In 2% of reported cases, the virus is fatal, and leads risk of death rises with old age. We see quite a few cases in children. [7]

Antiviral drugs frequently used in clinical practice, including neuraminidase inhibitors (oseltamivir, paramivir, zanamivir, etc.), ganciclovir, acyclovir and ribavirin, are invalid for 2019-nCoV and not suggested. The medicines possibly effective for 2019-nCoV includes: remdesivir, lopinavir / ritonavir united with interferon-β, convalescent plasma, and monoclonal antibodies. But the efficacy and safety of these drugs for 2019-nCoV pneumonia patients need to be assessed in further clinical trials. [8]

A study conducted by Sibylle Bernard-Stoecklin, Birgit Nikolay, et al on Comparative Analysis of Eleven Healthcare-Associated Outbreaks of Middle East Respiratory Syndrome Coronavirus (Mers-CoV) from 2015 to 2017. They examined epidemiologic and clinical data of laboratory-confirmed MERS-CoV cases from eleven healthcare-related occurrences in the Kingdom of Saudi Arabia and the Republic of Korea between 2015–2017. 25% (n = 105/422) of MERS cases who developed infection in a hospital setting were healthcare personnel. Our results highlight heterogeneities in the epidemiological profile of healthcare-associated outbreaks. [9]

Knowledge, Attitude and Practice (KAP) Study about Middle East Respiratory Syndrome Coronavirus (MERS-CoV) among Population in Saudi Arabia conducted on 2017. The result shows Out of 714 participants, women demonstrated a greater level of knowledge of MERS-CoV risk and prevention than men did. Social media was the foremost source information about MERS-CoV with (9.7%) excellent, (72.4%) fair and (17.9%) poor knowledge. However, females had a positive attitude toward the privation of camel’s milk and meat (81.6%, \( p \leq 0.001 \)) than males (66.7%). Concerning safety precautions, the data exhibit that males were significantly less than females in using safety precautions and prevention by 0.563 times (OR: 0.563 \((0.341-0.94), p \leq 0.05\)). [10]

A study on Knowledge and attitude towards the Middle East respiratory syndrome coronavirus among healthcare personnel in the southern region of Saudi Arabia. A cross-sectional study of 339 healthcare personnel in the Aseer region. The result showed 2/3rd of the respondents properly identified the causative agent of MERS-CoV as an RNA virus (66.4%, n=225) that is enveloped (68.1%, n=231). Few respondents identified the correct number of strains or the genus (16.5% and 17.4%, respectively). Above half of the study sample recognized the disease as zoonotic (57.2%, n=194). Same way, 89.1% (n=302) known that camels and bats are prone to infection with coronaviruses. Only 23.9% (n=81) accurately identified March through May as the period with the uppermost transmission rate. There was an immense lack of knowledge on prevalence of antibodies. Only 18.3% (n=62) of respondents know PCR as the proper diagnostic confirmatory test for MERS-CoV infection. On signs and symptoms, 76.4% (n=259) answered the presence of sub-clinical infection, 64.7% (n=218) indicated that cases should be instantly isolated, and 46.9% (n=159) told the main reason of mortality as respiratory failure. This study summarized, as there is less microbiological and virological knowledge of MERS-CoV infection amongst healthcare staffs in the southern province of Saudi Arabia, though the clinical aspects were known. [11]

The novel coronavirus (2019-nCoV) outbreak, which originally began in China, has spread to several countries around the globe, with the number of confirmed cases growing every day. With a death rate beyond that of the SARS-CoV outbreak back in 2002 and 2003 in China, 2019-nCoV has headed to a public health emergency of international concern, knocking all health organizations on high alert. No vaccine or specific treatment is presently available; however, several CoV specific vaccines and treatments are in progress. Treatment is supportive and based on the patient’s clinical condition. The public should be educated about infection prevention and control activities repeatedly. [12]

2 MATERIALS AND METHODS:
It is a cross-sectional study conducted at Al-namas and Balqarn among the female college students at the University of Bisha. The sample size for this research was 100 students selected by a convenient sampling method. A informed consent was obtained from the students prior to participation in the study with a brief explanation on the objectives and benefits of the study with emphasis that personal data would be used only for the research work. A questionnaire made by researchers based on the most recent and available information. The questionnaire consists of 32 questions arranged into four parts written in English and translated into Arabic, the first part includes 5 questions
Knowledge, Attitude and Practice on Prevention of Airborne and Droplet Infections During the Outbreak of Corona Virus among the College Students in University of Bisha, Saudi Arabia

The second part is with 10 questions on the knowledge of students about corona virus. The third part is with 10 questions to know the attitude of students. The fourth part have 7 questions to assess the practice of students about the prevention of the corona virus.

3 RESULTS:
The collected were analyzed based on the objectives of the study. The analyzed data has been organized and presented in the following tables:

Table 1 shows that Knowledge, Attitude and Practice are positively correlated with each other. Correlation is significant at the 0.01 level (2-tailed)

The study result on association with demographic variable and knowledge had no significance found in Education, Residence, and source of information. On Age and Subject specialty in higher education found a significant at P < 0.05 level. In association with demographic variable and attitude, there is no significance found in Education and sources of information. There is significant between attitude, age, Subject specialty in higher education and Residence. In association with demographic variable and Practice, there is no significance found in age and residence. There is significant between practice and Subject specialty in higher education, level of education and sources of information

4 DISCUSSION:
This study is to determine the knowledge, attitude and practice on prevention of Coronavirus among the college students. In general, our results showed relatively good knowledge, accepted attitude and better practices towards prevention of CoV. The social media is playing a vital role in educating the public about prevention of CoV.

This study finding is resembled with the study that published by Khalid El Tohami Medani et al., on Knowledge, Attitude and Practice of Middle East Respiratory Syndrome Corona Virus (Mers- CoV), among Male Primary School Students in Almajmaah City.

Figure 1. Distribution of Demographic variables among the college students. N=100

Figure 1 shows the distribution of demographic variables. Considering age, 51% of students are in between 20-22 years. On subject specialty, 32.7% of them were Applied medical science. 32.7% of them were Art and Science students at Enamas and 30.8% of them were Arts and Science students at Balqarn. Regarding level of study, 19.2% of them are master and another 76.9% of them were Bachilarate. In type of residence, 31.7% of them were from urban area and 64.4% of them were from rural area. On source of information, 21.2% get information from the MOH site and majority 64.4% of them from media.

Figure 2. Percentage Distribution of the Level of Knowledge, Attitude and Practice among the college students on prevention of airborne and droplet infection during the outbreak of Corona Virus N = 100

Figure 2 shows that the knowledge level of the students was 20 % of the students having Average knowledge, 52% of the students having Good knowledge and 28% of them with excellent knowledge. Attitude level of the students was 19% of the students having an average attitude, 37 % of the students having Good attitude and 44 % of them with excellent attitude. Practice level of the students was 18 % of the students having Average Practice, 34 % of the students having Good Practice and 48% of them with Excellent Practice.

Figure 3. Mean and standard deviation of the Knowledge, Attitude and Practice among the college students on prevention of Corona Virus infection. N=100

Figure 3 shows that the students over all knowledge mean is 2.08 with a standard deviation of 0.69, Attitude mean is 2.1 with a standard deviation of 0.72 and the Practice mean is 2.3 with a standard deviation of 0.76.

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A national cross-sectional study with 384 participants from different schools were included in the study. The result shows the average of the knowledge of the students is 37.5% and this result indicates a poor knowledge. On attitude, 52.04% correct answers, which indicates that the attitude of the male primary students in Almajmaah city is almost in the minimum acceptable range. [13]

A study done by Ahmed Morad Asaad, et al, on Exploring Knowledge and Attitude toward Middle East Respiratory Syndrome-Coronavirus (MERS-CoV) Among University Health Colleges' Students, Saudi Arabia: A Cross-Sectional Study. The study included 540 students. The study result shows Overall, >80% of students were aware about cause, mode of transmission, risk factors and signs and symptoms of MERS-CoV. 42% of participants have sufficient knowledge. Medical students had significantly better knowledge than the students in other Health Colleges did (p = 0.001). On attitude, >50% of students have a positive attitude. This study indicated a good knowledge level and a positive attitude towards protection from MERS-CoV among Health Colleges’ students. However, there is a perceptible failing in the knowledge about the microbiology of the virus and the infection control methods. The findings of this study highlight the need to plan awareness campaigns on new emerging diseases, infection control practice to all Colleges students to make them for dealing with these types of health emergencies in their future. [14]

5 CONCLUSION:

In conclusion, the study exhibited that there were a good knowledge, attitude and a practice amongst college students towards prevention of CoV infection. So, the continuous strengthening of the health educational programs are needed to improve the people knowledge, attitudes and practice toward prevention of infection. In the interest of global and public health, to include health education in the different curriculum, to use different media tools for health education and to utilize social media in empowering health education.

REFERENCES