



A STUDY TO ASSESS THE KNOWLEDGE AND PREVENTIVE BEHAVIOR RELATED TO COVID -19 AMONG HEALTH CARE PROFESSIONALS

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ABSTRACT

Coronavirus disease (COVID-19) is an infectious disease caused by the SARS-CoV-2 virus.

Most people infected with the virus will experience mild to moderate respiratory illness and recover without requiring special treatment. However, some will become seriously ill and require medical attention.

The best way to prevent and slow down transmission is to be well informed about the disease and how the virus spreads. Protect yourself and others from infection by staying at least 1 metre apart from others, wearing a properly fitted mask, and washing your hands or using an alcohol-based rub frequently. Get vaccinated when it's your turn and follow local guidance.

The disease is highly infectious, and further studies identified that the most important route of transmission to humans occurred via respiratory droplets or direct contact, with an incubation period ranging from 2 to 14 days. Healthcare providers are the primary individuals in contact with patients who are the main source of infections; thus, they are at high risk of becoming infected themselves.

Their knowledge and risk perception on covid 19 plays an important role in preventing them from acquiring the disease themselves. In the present study we are trying to assess the knowledge and preventive behavior followed by the medical professionals from NRI medical college, sangivalasa.

KEYWORDS : covid -19, health care professionals

INTRODUCTION:

Coronavirus disease (COVID-19) is an infectious disease caused by the SARS-CoV-2 virus.

Most people infected with the virus will experience mild to moderate respiratory illness and recover without requiring special treatment. However, some will become seriously ill and require medical attention. Older people and those with underlying medical conditions like cardiovascular disease, diabetes, chronic respiratory disease, or cancer are more likely to develop serious illness. Anyone can get sick with COVID-19 and become seriously ill or die at any age.

The best way to prevent and slow down transmission is to be well informed about the disease and how the virus spreads. Protect yourself and others from infection by staying at least 1 metre apart from others, wearing a properly fitted mask, and washing your hands or using an alcohol-based rub frequently. Get vaccinated when it's your turn and follow local guidance.

The virus can spread from an infected person's mouth or nose in small liquid particles when they cough, sneeze, speak, sing or breathe. These particles range from larger respiratory droplets to smaller aerosols. It is important to practice respiratory etiquette, for example by coughing into a flexed elbow, and to stay home and self-isolate until you recover if you feel unwell.

Coronavirus infections are caused by emerging respiratory viruses that are known to cause diseases ranging from the common cold to illnesses involving severe respiratory distress [1]. In 2002, the first pandemic outbreak of the coronavirus that causes severe acute respiratory syndrome (SARS) was associated with a mortality rate of approximately 10%. In 2012, the outbreak caused by Middle East respiratory syndrome coronavirus (MERS-CoV) was associated with a mortality rate of 30-40% [1]. In December 2019, a new outbreak of viral pneumonia of an unknown etiology developed in Wuhan, China. The genetic analysis of the underlying pathogen revealed an enveloped positive-strand ribonucleic acid (RNA) virus belonging to the family Coronaviridae and the order Nidovirales [2]. In February 2020, the World Health

Organization (WHO) named the epidemic disease caused by this virus, coronavirus disease (COVID-19) [1]. In response to this serious situation, the WHO declared COVID-19 a public health emergency of international concern [1,2]. COVID-19 infections spread very quickly. By the first weeks of March 2020, many new cases had been reported globally, and COVID-19 was declared a pandemic. In the same month, more than 125,000 cases of COVID-19 were reported in about 118 countries, with more than 4600 deaths [1,2].

The disease is highly infectious, and further studies identified that the most important route of transmission to humans occurred via respiratory droplets or direct contact, with an incubation period ranging from 2 to 14 days [3]. Clinical data have shown the overall mortality rate of COVID-19 infection to be 2.3% in China, which is much lower than that of SARS (9.5%) or MERS (34.4%) [3]. To date, no specific antiviral treatment has been confirmed to be effective for treating COVID-19. Therefore, many preventive measures have been identified to help control its transmission [4].

Healthcare providers are the primary individuals in contact with patients who are the main source of infections; thus, they are at high risk of becoming infected themselves.

At the end of January, the WHO and the US Centers for Disease Control and Prevention (CDC) published recommendations to help prevent the rapid spread of COVID-19 among healthcare workers [4,5]. Several online training sessions and materials were made available in several languages by the WHO to provide information about COVID-19 prevention strategies and to increase the awareness of healthcare workers treating patients [6].

This knowledge and awareness of the COVID-19 pandemic can influence the risk perceptions of healthcare workers and their ability to engage in preventive strategies.

However, some studies have noted a significant gap in information sources available to healthcare workers and have identified low knowledge levels concerning COVID-19 [1].

For example, Pranav et al. concluded that there was a need for a greater number of educational and training programs to reduce the risk of infectious transmission among healthcare professionals, and to provide optimal care for patients [7].

In such an emergency when the medical faculty from our institution are also being deputed for the treatment of covid patients. Adherence to novel coronavirus disease 2019 (COVID-19) appropriate behavior plays a crucial element in the management of the infections of COVID-19. Despite the importance of transmission-reducing behaviors among healthcare professionals, there is a lack of literature in this area of research. Therefore, it is essential to assess the adherence level to COVID-19 transmission-reducing behaviors among the healthcare professionals. Their knowledge and risk perception on covid 19 plays an important role in preventing them from acquiring the disease themselves. In the present study we are trying to assess the knowledge and preventive behavior followed by the medical professionals from NRI medical college, sangivalasa.

MATERIALS AND METHODS:

The present study was done on the faculty of NRI medical college, Sangivalasa who were involved in the treatment of covid 19 patients during the pandemic. About 140 faculty members who were posted in covid ward were asked to fill a google form which contained the questions related to their knowledge about covid 19, and the risk perception and preventive measures followed by them. A web-based online survey was conducted using questions. The completely filled in questionnaires were analysed for the results.

Table1: showing the knowledge about covid -19 among health care professionals

1. COVID-19 is a respiratory infection caused by a new species of virus in the coronavirus family	Y-121 (86.42%) N-19 (13.57%)
2. The first case of COVID-19 was diagnosed in Wuhan, China 319	Y-127 (90.71%) N-3 (9.29%)
3. The origin of COVID-19 in humans is likely through transmission from bats	Y-121 (86.42%) N-19 (13.57%)
4. Its common symptoms are fever, cough, and shortness of breath, but nausea and diarrhea are reported rarely.	Y-126 (90%) N-14 (10%)
5. Its incubation period is up to 14 days.	Y-121 (86.42%) N-19 (13.57%)
6. It can be diagnosed by RTPCR testing of samples collected from nasopharyngeal and oropharyngeal discharge or from sputum and bronchial washing	Y-121 (86.42%) N-19 (13.57%)
7. It is transmitted through respiratory droplets such as those generated by coughing and sneezing.	Y-126 (90%) N-14 (10%)
8. It is transmitted through close contact with an infected person ;especially by family members and in crowded places and healthcare centers.	Y-140 (100%) N-0
9. The disease can be prevented through frequent handwashing and personal hygiene	Y-121 (86.42%) N-19 (13.57%)
10. A surgical mask is useful to prevent the spread of respiratory droplets during coughing	Y-121 (86.42%) N-19 (13.57%)
11. The disease can be prevented through maintaining no close contact, such as handshakes and not attending social gatherings, and frequently disinfecting the hands	Y-121 (86.42%) N-19 (13.57%)
12. All people in the society should wear face masks when going outside.	Y-121 (86.42%) N-19 (13.57%)

13. Only during aerosol generation procedures such as intubation, suction, bronchoscopy, and cardiopulmonary resuscitation do you have to wear an N95 mask	Y-19 (13.57%) N- 121(86.42%)
14. The disease can be treated by usual antiviral drugs.	Y-101 (72.14%) N-39 (27.86%)
15. If symptoms appear within 14 days from direct contact with a suspected case, the person should report to the nearby government healthcare centre.	Y-139 (99.28%) N-1 (0.07%)
16. aware of mutations	Y-102 (72.85%) N-38 (27.14%)

Table2: showing the preventive behaviour about covid -19 among health care professionals.

1. I canceled or postponed meetings with friends, eating out	138(98.57%)
2. I reduced the use of public transportation.	121(86.42%)
3. I went shopping less frequently.	103(73.57%)
4. I reduced visits to closed spaces, such as the malls, theatre etc.	138(98.57%)
5. I avoided coughing around people as much as possible.	138(98.57%)
6. I avoided public gatherings and crowded places.	121(86.42%)
7. I increased the frequency of cleaning and disinfecting items that can be easily touched with my hands(i.e., door handles and surfaces).	138(98.57%)
8. I washed my hands frequently.	138(98.57%)
9. I discussed COVID-19 preventions with my family and friends.	127(90.71%)
10. Took 2 doses of vaccination	140 (100%)

The preventive measures seen in a health care setting:

- 1) Wear personal protective equipment (PPE)?
Always as recommended 138(98.57%)
Occasionally 2(1.42%)
- 2) Single gloves
Always as recommended 121 (86.42%)
Occasionally 19 (13.57%)
- 3) Medical mask
Always as recommended 133 (95%)
Occasionally 7 (5%)
- 4) Face shield or goggles/protective glasses
Always as recommended 13 (9.28%)
Occasionally 127 (90.71%)
- 5) Disposable Gown
Always as recommended 103 (73.57%)
Occasionally 37 (26.42%)
- 6) Remove and replace PPE according to protocol
Always as recommended 129 (92.14%)
Occasionally 11 (7.85%)
- 7) Wash hands Before and after touching the COVID-19 patient?
Always as recommended 138 (98.57%)
Occasionally 2 (1.42%)
- 8) Sanitise hands Before and after any clean or aseptic procedure
Always as recommended 138 (98.57%)
Occasionally 2 (1.42%)
- 9) After exposure to body fluid?
Always as recommended 122 (87.14%)
Occasionally 18 (12.85)
- 10) Wash hands After touching the COVID-19 patient's surroundings
Always as recommended 131 (93.57%)
Occasionally 9 (6.42%)

In the non healthcare settings the preventive measures were followed by only 73% of the medical professionals.

The risk perception was found to be higher in the participants of the study.

DISCUSSION:

Healthcare professionals are the frontline in the fight against the novel coronavirus, and they have always been at risk of contracting the infectious disease. For these reasons, it is necessary to evaluate their knowledge, assess their preventive behaviors, and measure their risk perception in regards to the COVID-19 pandemic. The outcomes of this research could be useful for health policymakers and medical educators to design a systematic plan to ensure that the health care professionals are aware of the COVID-19 pandemic and the necessary preventive measures. A literature search conducted revealed limited available data from studies that measured medical professionals' knowledge, preventive behaviors, and risk perception during the COVID-19 pandemic. In this study, nearly all participants (98.57%) exhibited a high level of knowledge regarding COVID-19; the rest exhibited either an average or a low level of knowledge.

Consistently, the current literature indicates that many people, including healthcare workers, medical professionals, and the general public, demonstrated a high level of knowledge regarding the pandemic, varying from 69% to 91% [2,7–14]. On the other hand, during the MERS viral outbreak, studies assessing groups knowledge of the outbreak reported inconsistent results. Khan et al. [15] documented that healthcare workers' knowledge of MERS was "good" among 73.2% of respondents, which was in line with our study reports, but contrary to those of Nuor et al. [16] in which 67.6% of healthcare providers exhibited a "poor" level of knowledge. Furthermore, several studies have indicated that age was a factor associated with knowledge about the virus [1,8,10,16], as increased age was associated with an increased level of knowledge. This was not observed, however, in our study. Similarly, reports by Al Hanawi et al. [8] as well as Khan et al. [15] indicated that sex was a factor associated with knowledge; however, both studies reported disparate results. In our study, there was no significant relationship was observed between sex and the level of COVID-19 knowledge, which contradicts previous findings.

The data revealed that medical professionals exhibited an overwhelmingly high degree of preventative behavior to protect against COVID-19 (98.57%); only a few of them exhibited average and low-level preventive behaviors. This finding mirrored that of a study conducted by Taghir et al., [2], who found that 94.2% of medical students exhibited a high degree of self-reported preventive behaviors in response to the pandemic. Moreover, our data showed that no sociodemographic variables were significantly associated with self-reported preventive behavior scores, which was also similar to the findings of Taghir et al. [2].

Apart from measuring the knowledge and behavior of medical professionals related to the COVID-19 pandemic, we also investigated their levels of risk perception, which was at an high level among medical professionals. This is also consistent with the positive perceptions exhibited by healthcare workers, as well as medical and allied health science students, about the pandemic, as reported by researchers in the United Arab Emirates and in India [1,9]. The findings of our study are in contrast with the average level of risk perception that was reported by Taghir et al. [2].

On the other hand, according to Bhagavathula et al. [1], age and profession were significant factors associated with poor risk perception. However, in our study, age was not significantly associated with risk perception, though we could not assess whether profession was an associated factor since our subjects were all medical professionals. Moreover, we believe that the time when the pandemic started, cultural aspects, and trust of health authorities might influence knowledge, behavior, and risk perception of individuals in different countries.

One of the highlights of our results was that there was a positive, significant correlation between the knowledge and

self-reported preventive behavior scores, suggesting that as medical professionals' knowledge of COVID-19 increased, so did their self-reported preventive behaviors. On the other hand, there was no significant correlation between knowledge and risk perception scores. These results were not consistent with those of Kim and Choi [12], who reported a significant correlation between the levels of knowledge and preventive behaviors. However, in the study by Taghir et al., [2], they identified a negative correlation between preventive behavior and risk perception, arguing that while self-reported behavior scores increased, risk perception was likely to decrease. In our study, we found a positive correlation between self-reported preventive behaviors and the risk perception score, indicating that as the self-reported behaviors increased, the risk perception also increased, which was in contrast to the results of the Iranian study described above [2].

To learn more about the current pandemic, it is necessary to provide everyone with access to sources of information. In this study, the most frequently noted source of COVID-19 information was material provided by the local Ministry of Health (83%), followed by the CDC, and the WHO. Due to the influence of social media, many people also sought information on the internet. This has also been consistently reported in the literature, where the majority of individuals read information about the pandemic on public health websites [1,9–11,13,15–18]. In our study, 63% of medical professionals reported using social media to obtain information about COVID-19, which was also in line with previous findings.

The adherence level to recommended precautionary behavioral practice toward COVID-19 among the participants on the study was found to be much higher. [16]

This study had some limitations. In particular, the study was conducted in only a single region, which may not be representative of all the health care professionals in visakhapatnam.

Additionally, the questionnaire was conducted online due to the mitigation measures in place in response to the COVID-19 pandemic, which might have affected the response rate and generalizability.

CONCLUSION:

The adherence level to recommended precautionary behavioral practice toward COVID-19 among the participants on the study was found to be much higher. Although most the participants reported recommended protective measures to the highest level at workplace, there was a gap on adherence to the appropriate measures at non-workplace, especially, behavioral practice for wearing masks and disinfecting homes. Furthermore, the finding also indicated a significant positive association between the risk perception and adherence of the participants to recommended behavioral practices. Therefore, there is a need to educate the importance of precautionary measures in the non-healthcare settings.

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