RESEARCH ARTICLE

Beliefs Related to COVID-19 Infection among the Nursing Students during the Early Part of the COVID-19 Pandemic

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Abstract

Background: The COVID-19 pandemic has led to several misconceptions and controversies related to the transmission, treatment, prevention, and management of COVID-19 infection. Nursing personnel and students form a major group of frontline warriors, and they can play an important role in dispelling misconceptions. Hence, it is essential to understand their knowledge and beliefs related to various aspects of COVID-19 infection.

Aim: To evaluate the beliefs held by the nursing students on various aspects of COVID-19.

Materials and methods: An online cross-sectional survey was conducted through the Survey Monkey® platform using WhatsApp®, among the nursing students of two institutes in North India.

Results: A total of 332 nursing students participated in the survey and the response rate to the survey was 57.2%. The mean age of the participants was 21.38 [standard deviation (SD)— 2.43] years, the majority being females (87.3%) and were pursuing graduation nursing courses (n = 318; 95.8%). Incorrect beliefs related to various preventive aspects, modes of spread of infection, and treatments were present in a significant proportion of the participants. When the prevalence of various misconceptions (number of participants with at least one incorrect response related) was evaluated, the same ranged from 42.8 to 93.7% in different areas.

Conclusion: This survey highlights the widespread prevalence of misconceptions about various aspects of COVID-19 among nursing students, which needs to be addressed by proper education and awareness.

Keywords: Beliefs, COVID-19, Nurses.

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Introduction

The COVID-19 pandemic seems to be unending, with close to 3.3 million deaths worldwide (as on 15th May 2021).[1] The controversies related to the treatment, spread, and transmission of COVID infection are multifacial and ever-changing.[2–4] The currently available treatment strategies related to COVID-19 infection are associated with several controversies.[5] This has contributed to the emergence of certain incorrect beliefs and myths related to COVID-19, which have surfaced on the internet/social media platforms. All these have created a lot of confusion.[6,7] The research on various aspects of COVID-19 infection (transmission, testing strategies, vaccination, and treatment guidelines) is being updated on day to day basis. Hence, it is essential to critically analyze any information before disseminating the same to others.[8] In the initial few months of the pandemic (March–June 2020), the misconceptions were mainly related to the issues involving day-to-day functioning, that is, sources of infection, how to protect oneself from infection, or improve personal immunity. Other misconceptions involved sexual functioning, the transmission of infection during pregnancy and childbirth, lactation, and fear of acquiring the infection from persons who have recovered from COVID-19 infection or from those under quarantine.[7,9] However, with the passing of time, the list of myths, beliefs, and unrecommended practices is expanding and currently, myths related to COVID-19 vaccines are surfacing in the media and among the general public.[10]

Healthcare professionals have an important role in dispelling these misconceptions and myths. Nursing personnel and students form a major group of frontline warriors in the COVID-19 pandemic since the very beginning of the pandemic. Accordingly, they can play an important role in dispelling the misconceptions or conversely can help in spreading of these misconceptions if they are ill-informed about the various aspects of COVID-19 infection. Hence, it is important to understand the beliefs, misconceptions, and myths among nursing professionals. We defined beliefs as "an acceptance that something exists or is true, especially one without proof" and myths as widely held false beliefs or ideas. Keeping this in mind, the current study aimed to evaluate the beliefs held by nursing students about the various aspects of COVID-19 infection.

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Materials and Methods

It was an online cross-sectional survey conducted through the Survey Monkey® platform. Nursing students pursuing graduation

or postgraduation courses were approached and requested to participate in the survey. The students pursuing these courses in two of the institutes in North India were approached through their class representatives.

For this, a survey link was circulated by using WhatsApp®, both individually and through the WhatsApp groups of the nursing students. The survey invitation clearly stated that the participants would have the right not to participate in the survey, and participation in the survey would imply providing informed consent. The survey link stated clearly that those not willing to participate could ignore the message. The survey link was opened for the period of 14th May 2020 and the link was deactivated on 25th May 2020 (i.e., after 10 days). The students were requested not to forward the survey link to others, except for their colleagues. Participation in the survey was completely voluntary, and the participants had the full freedom of not responding to the survey.

Similarly, those filling the survey were under no compulsion to forward the same to others. The authors were not directly involved in the circulation of the survey after a particular stage. The participants could respond only once by using a particular device once. The study was approved by the Institute's Ethics Committee.

The survey-specific questionnaire was designed based on the review of literature on the prevailing myths/beliefs (collected from the websites of the World Health Organization (WHO), Centre for Disease Control, Ministry of Health and Family Welfare of India, newspaper reports). Initially, the authors generated incorrect beliefs and myths, and further internet search was done to verify the facts. Based on the evidence published in peer review journals in the form of randomized trials, cohort studies, or at least one case report, and the conclusions drawn from these reports, the beliefs were considered to be "correct" or "incorrect (myth)."[7] Based on this, a self-rated questionnaire was designed with four response options, that is, "yes," "no," "don't know" and "can't say" considered. The option of "can't say" was used so as to capture the ambivalence about certain beliefs. The survey questionnaire was in English and on average, took 7–8 minutes to fill the entire questionnaire.

Descriptive statistics were applied to the data collected and were analyzed using SPSS 20.0 version.

Results

A total of 332 nursing students filled out the survey. Before analysis of the data, the IP addresses were checked to avoid any kind of duplicate response. The response rate was about 57.24% (i.e., 332 out of the total strength of 580 students).

The mean age of the participants was 21.38 (SD- 2.43) years. The majority of the participants were females (n = 290; 87.3%), unmarried (n = 317; 95.5%) and were pursuing graduation nursing course (n = 318; 95.8%).

Incorrect beliefs related to various preventive aspects, modes of spread of COVID-19 infection, and treatments were present in a significant proportion of participants, with a wide variation for specific issues. Those who had given incorrect responses of a particular question in one section were summated and then the number of participants with at least one incorrect response was calculated. When the prevalence of various misconceptions (number of participants with at least one incorrect response related) was evaluated the same ranged from 42.8 to 93.7% in different areas (Tables 1 to 3).

On enquiring about the beliefs about the consumption of different food items/ beverages which can help in reducing the chance of developing COVID-19 infection, as evident from Table 1, Question 1, about one-third to half of the participants reported that garlic (34.6%), turmeric (43.7%), lemon (52.7%), and gargling with salt water (58.1%) can reduce the chance of infection. About 72% of participants believed that drinking warm water can also reduce the risk of developing an infection of COVID-19.

Similarly, when asked about consumption of different food items (such as non-vegetarian food items), doing certain practices (such as keeping pets at home, donating blood, using Chinese products, buying products from overseas) or engaging in intimate activities (such as kissing, sexual intercourse with spouse/partner, or with unknown persons (Table 2; Question 2). As evident, about 11 to 26% of participants believed that consumption of eggs (11.7%), fish (21.1%), and chicken (26.5%) can increase the chance of developing an infection. Increasing the possibility of developing infection through consumption of unwashed vegetables was reported by about 86% of the participants. The risk of acquiring infection by using newspapers was reported by 44.3% and milk packets by 34.9% of the participants. Donating blood was reported to increase the risk by about one-fourth of the participants. More strikingly, using Chinese products (34.6%) and ordering products from overseas (66.3%) to increase infection risk were reported by about one-third and two-fifths of the participants, respectively. Regarding intimate activities, about three-fourths reported kissing (77.4%), and about one-third (35.2%) reported having sexual intercourse with a spouse/partner can increase the risk of infection. Further, details are mentioned in Table 1.

Similarly, further inquiry was made about the beliefs related to the chance of developing infection in terms of coming in contact with an infected person, recovered neighbors, and health care workers (HCWs) (Table 1; Question 3). While about two-thirds of participants reported (68.4%) that coming in contact with an infected person in the same housing complex, who is confined to his home can increase the risk of getting an infection, about two-fifths (41.6%) had similar views of getting an infection on exposure to persons quarantined for COVID-19 in their housing complex/neighborhood. Moreover, while about three-fifths (61.4%) % of the participants were of the opinion that meeting an HCW on duty in a COVID hospital can increase the risk of infection, another 35% reported having an HCW in the same housing complex/neighborhood can increase the risk of getting an infection (Table 1; Question 3).

The opinion of the participants on different preventive strategies (such as exposure to sunlight, taking hot baths, using hand dryers, spraying alcohol, taking vaccines, etc.) which have been claimed as beneficial on different social media platforms was asked. Getting enough sunlight and taking a hot bath were reported to prevent COVID-19 by about 41% and 23% of the participants. Hand dryers and taking pneumococcal vaccines were said to be preventive by about one-tenth of the participants (Table 2). Wearing a mask or N95 mask as a preventive strategy against COVID-19 infection was reported by about 93.4% of the participants. Similarly, good practices such as frequent hand washing, maintaining physical distancing, and using hand sanitizers to prevent infection were supported by the majority of the participants (about 97–98%).

Drinking alcohol and using cow-dung/cow urine can cure the infection was also reported by 1–3% of the participants. Chanting religious hymns and clapping to destroy the virus was supported by 8% of the participants. Regard to those without symptoms but who can spread the infection was supported by one-fifth of the

Table 1: Questions and responses on different aspects of COVID-19 related to spread of infection (n = 332)

Question 1: Do you believe consumption of the following can REDUCE the chance of developing COVID-19 infection?				
Variables	*Yes frequency (%)*	*No frequency (%)*	*Can't say frequency (%)*	*Don't know frequency (%)*
Garlic	115 (34.6%)	127 (38.3%)	70 (21.1%)	20 (6.0%)
Turmeric	145 (43.7%)	104 (31.3%)	72 (21.7%)	11 (3.3%)
Lemons	175 (52.7%)	83 (25.0%)	59 (17.8%)	15 (4.5%)
Gargling with saltwater or saline	193 (58.1%)	67 (20.2%)	57 (17.2%)	15 (4.5%)
Drinking warm water	239 (72.0%)	53 (16.0%)	31 (9.3%)	9 (2.7%)
Sniffing/inhaling alcohol	13 (3.9%)	281 (84.6%)	23 (6.9%)	15 (4.5%)
Drinking alcohol	19 (5.7%)	285 (85.8%)	19 (5.7%)	9 (2.7%)
Number of participants with at least one incorrect belief	274 (82.5%)			
Question 2: Which of the following can INCREASE the chance of developing COVID-19 infection?				
Variables	*Yes frequency (%)*	*No frequency (%)*	*Can't say frequency (%)*	*Don't know frequency (%)*
Mosquito bites	30 (9.0%)	253 (76.2%)	34 (10.2%)	15 (4.5%)
Having pets at home	59 (17.8%)	212 (63.9%)	53 (16.0%)	8 (2.4%)
Consumption of eggs	39 (11.7%)	244 (73.5%)	40 (12.0%)	9 (2.7%)
Consumption of meat/chicken	88 (26.5%)	172 (51.8%)	65 (19.6%)	7 (2.1%)
Consumption of fish	70 (21.1%)	186 (56.0%)	61 (18.4%)	15 (4.5%)
Consumption of unwashed vegetables	287 (86.4%)	16 (4.8%)	25 (7.5%)	4 (1.2%)
Donating blood	80 (24.1%)	194 (58.4%)	44 (13.3%)	14 (4.2%)
Ordering or buying products shipped from overseas	220 (66.3%)	53 (16.0%)	46 (13.9%)	13 (3.9%)
Using newspapers	147 (44.3%)	118 (35.5%)	62 (18.7%)	5 (1.5%)
Using milk packets	116 (34.9%)	150 (45.2%)	60 (18.1%)	6 (1.8%)
Using Chinese products	115 (34.6%)	131 (39.5%)	75 (22.6%)	11 (3.3%)
Eating Chinese foods (fast foods)	89 (26.8%)	181 (54.5%)	52 (15.7%)	10 (3.0%)
Kissing	257 (77.4%)	40 (12.0%)	22 (6.6%)	13 (3.9%)
Unprotected sexual intercourse with spouse	117 (35.2%)	127 (38.3%)	61 (18.4%)	27 (8.1%)
Unprotected sexual intercourse with unknown persons	205 (61.7%)	53 (16.0%)	49 (14.8%)	25 (7.5%)
Number of participants with at least one incorrect belief	311 (93.7%)			
Question 3: As per you, coming in contact with which of the following can INCREASE the chance of developing COVID-19 infection?				
Variables	*Yes frequency (%)*	*No frequency (%)*	*Can't say frequency (%)*	*Don't know frequency (%)*
A person infected with COVID-19 in your housing complex/neighborhood, who is confined to his home	227 (68.4%)	89 (26.8%)	14 (4.2%)	2 (0.6%)
A person quarantined for COVID-19 in your housing complex/neighborhood, who is confined to his home	138 (41.6%)	149 (44.9%)	39 (11.7%)	6 (1.8%)
Meeting a Healthcare Worker (HCW) who is on duty in COVID hospital	204 (61.4%)	64 (19.3%)	61 (18.4%)	3 (0.9%)
If Healthcare Workers (HCWs) are residing in your housing complex/neighborhood	117 (35.2%)	146 (44.0%)	68 (20.5%)	1 (0.3%)
Having a neighbor who has recovered from COVID-19 infection	73 (22.0%)	172 (51.8%)	81 (24.4%)	6 (1.8%)
Number of participants with at least one incorrect belief	281 (84.6%)			

participants (21.4%) but about one-third of participants agreed that someone who had recovered from COVID-19 can still spread the infection (34.3%). Similarly, the belief that HCW can spread infection was agreed by 22% of the participants (Table 2).

On enquiring about some of the beliefs related to treatment, about one-third reported antibiotics (31.6%) and one-fourth (25.6%) reported the use of colloidal silver/vitamins/minerals to be useful in the treatment of COVID-19. About one-tenth (10.2%) reported developing malaria makes one immune to COVID-19 (Table 3).

About half of the participants (47.6%) were of the opinion that Indians had better immune systems than Western countries. About 22% had the belief that thermal scanners can detect virus in the body. Regarding vaccination, about 17% were of the opinion that Bacillus Calmette–Guérin (BCG) immunization can confer protection against coronavirus infection and about 29% thought no vaccine can be developed against COVID-19 infection. With regard to some of the prevailing conspiracy theories about COVID-19 infection, about 50% held the belief that COVID-19 is a bioweapon developed

Table 2: Questions pertaining to different preventive and treatment strategies and the responses received

Question: Choose the option, which you consider is CORRECT, with respect to the COVID-19 infection.				
Variables	*Yes frequency (%)*	*No frequency (%)*	*Can't say frequency (%)*	*Don't know frequency(%)*
Getting enough sunlight is effective in preventing COVID-19	137 (41.3%)	103 (31.0%)	84 (25.3%)	8 (2.4%)
Avoiding sunlight is effective in preventing COVID-19	5 (1.5%)	293 (88.3%)	30 (9.0%)	4 (1.2%)
Taking a hot bath can prevent COVID-19 infection	79 (23.8%)	163 (49.1%)	80 (24.1%)	10 (3.0%)
COVID-19 infection cannot be transmitted in areas with hot and humid climates	28 (8.4%)	241 (72.6%)	56 (16.9%)	7 (2.1%)
Hand dryers are effective in killing the COVID-19 virus	38 (11.4%)	234 (70.5%)	51 (15.4%)	9 (2.7%)
Spraying alcohol or chlorine all over your body can kill the COVID-19 virus	99 (29.8%)	168 (50.6%)	52 (15.7%)	13 (3.9%)
Taking vaccines against pneumonia can protect you against the COVID-19 infection	39 (11.7%)	191 (57.5%)	76 (22.9%)	26 (7.8%)
Wearing a mask or N95 mask can prevent the transmission of COVID-19	310 (93.4%)	11 (3.3%)	10 (3.0%)	1 (0.3%)
Repeated handwashing can prevent COVID-19 infection	325 (97.9%)	2 (0.6%)	3 (0.9%)	2 (0.6%)
Maintaining physical distance from others can prevent COVID-19 infection	326 (98.2%)	1 (0.3%)	3 (0.9%)	2 (0.6%)
Use of hand sanitizers can prevent COVID-19 infection	322 (97.0%)	2 (0.6%)	6 (1.8%)	2 (0.6%)
Drinking alcohol can cure COVID-19 infection	13 (3.9%)	289 (87.0%)	25 (7.5%)	5 (1.5%)
Using cow dung and cow's urine can cure the COVID-19 infection	4 (1.2%)	281 (84.6%)	31 (9.3%)	16 (4.8%)
Religious chants and clapping hands creates vibrations that destroy the COVID-19 virus	27 (8.1%)	259 (78.0%)	33 (9.9%)	13 (3.9%)
Someone without symptoms cannot spread the COVID-19 infection	71 (21.4%)	242 (72.9%)	16 (4.8%)	3 (0.9%)
All those who been quarantined because of travel history, had developed the COVID-19 infection	80 (24.1%)	208 (62.7%)	39 (11.7%)	5(1.5%)
Someone who has recovered from COVID-19 infection can still spread the infection	114 (34.3%)	116 (34.9%)	93 (28.0%)	9 (2.7%)
All Healthcare Workers (HCWs) can spread the COVID-19 infection	73 (22.0%)	220 (66.3%)	33 (9.9%)	8 (1.8%)
Number of participants with at least one incorrect belief	242 (72.9%)			

Table 3: Questions pertaining to beliefs related to treatment and on various miscellaneous issues

Question: Read each statement carefully and select the option, which you think is CORRECT for treatment of COVID-19 infection.				
Variables	*Yes frequency (%)*	*No frequency (%)*	*Can't say frequency (%)*	*Don't know frequency (%)*
Use of colloidal silver, vitamins, teas, and essential oils	85 (25.6%)	120 (36.1%)	80 (24.1%)	47 (14.2%)
Developing malaria makes one immune	34 (10.2%)	198 (59.6%)	65 (19.6%)	35 (10.5%)
Antibiotics	105 (31.6%)	172 (51.8%)	41 (12.3%)	14 (4.2%)
Number of participants with at least one incorrect belief	142 (42.8%)			
Question: Please read each statement carefully, and choose the response, which you BELIEVE is CORRECT for COVID-19 infection.				
Variables	*Yes frequency (%)*	*No frequency (%)*	*Can't say frequency (%)*	*Don't know frequency (%)*
COVID-19 virus affects only older people	9 (2.7%)	316 (95.2%)	6 (1.8%)	1 (0.3%)
All people who will be infected with COVID-19 will die, due to the same	12 (3.6%)	308 (92.8%)	8 (2.4%)	4 (1.2%)
The Indian immune system is better than the West and thus Indians will survive COVID-19 infection better	158 (47.6%)	67 (20.2%)	93 (28.0%)	14 (4.2%)
Thermal scanners can detect the virus in your body	74 (22.3%)	196 (59.0%)	40 (12.0%)	22 (6.6%)
Those immunized with BCG are more likely of not developing COVID-19 infection	59 (17.8%)	166 (50.0%)	79 (23.8%)	28 (8.4%)
No vaccine can be developed against COVID-19 infection	98 (29.5%)	117 (35.2%)	98 (29.5%)	19 (5.7%)
COVID-19 is a bio-weapon developed by China to gain power over the World	167 (50.3%)	23 (6.9%)	107 (32.2%)	35 (10.5%)
The world is going to end due to COVID-19	36 (10.8%)	200 (60.2%)	84 (25.3%)	12 (3.6%)
Muslims are spreading the infection	77 (23.2%)	188 (56.6%)	57 (17.2%)	10 (3.0%)
5G is responsible for spreading the infection	13 (3.9%)	230 (69.3%)	50 (15.1%)	39 (11.7%)
Number of participants with at least one incorrect belief	277 (83.4%)			

by China, and one-tenth reported that the World is going to end due to COVID-19 (Table 3).

Discussion

The present study suggests that incorrect beliefs/misconceptions on various aspects of COVID-19 infection (getting infected/prevention and treatment) are highly prevalent among nursing students. Considering that they are getting involved in the care of people with COVID-19, or because of their being recognized as future medical professionals, they would be often approached by lay persons to clarify their myths. Hence, it is important to address the misconceptions among them.

Some of the practices that were endorsed to reduce the chance of getting infected were garlic, turmeric, lemon, gargling with warm water, and drinking warm water. While following these practices are proposed to improve immunity, yet till date no controlled trials have been published to support the fact that these items can enhance immunity against COVID-19 infection.[7,11,12] The AYUSH Ministry of India advocates the role of these commodities in preventive aspects of COVID-19. Recently, it is stated that these have been supported by 58 trials on Ayurveda-based interventions for COVID-19 infection, but these have not been published to support or refute the claim.[13] Two recent published clinical trials on various Ayurvedic regimens on asymptomatic COVID-positive patients suggest the efficacy of these regimens *(Dasamoolkaduthrayam Kashaya and Guluchyadi Kwatham; Giloy Ghanvat, Swasari Ras, Ashwagandha and Tulsi Ghanvati)* to hasten the recovery of hospitalized patients in terms of reduction of symptoms and duration of hospital stay.[14,15] However, it is important to note that these studies have been criticized for various methodological fallacies.[16,17] Keeping this in mind, the healthcare professionals and nursing students should be informed that these practices can enhance immunity in general, which does not necessarily prevent COVID-19 infection. Similarly, the practice of rinsing with warm saline water and drinking warm water can soothe a sore throat, but following these practices does not necessarily prevent one from getting infected with COVID-19. These practices have also not been evaluated in well-designed studies to make any definitive conclusion.

A significant proportion of participants had misconceptions or were unsure about the role of factors such as non-vegetarian food items (eggs, chicken, fish; 11–26%), having pets at home (17%), consuming Chinese foods (26%), using Chinese products (34%), and buying products from overseas (66%) in increasing the risk of developing/contracting COVID-19 infection. Some of these beliefs are possibly related to the origin of COVID-19 infection from the Wuhan meat market,[18] and the fear of spread by using inanimate objects or products from China. However, as the pandemic has evolved, there is a better understanding that the virus does not spread by fomites. Hence, it is important to update the students about the same.

Some of the earlier reports suggested the prevalence of the belief that COVID-19 can be transmitted through blood. This led to a scarcity of blood in blood banks[19–21] and this led to a reduction in blood donation, a crisis for managing patients dependent on blood transfusion a reduction in blood donations. In the present study, about one-fourth of the nursing students held the belief that blood donation can increase the risk of COVID-19 transmission, which requires attention. There is a need to address these misconceptions so that the correct message is percolated to the general population.

At the outset of the COVID-19 pandemic, there was lot of speculation about the spread of infection through newspapers, milk packets, unwashed vegetables, and buying products from overseas as these could be a source of fomite transmission. However, it has been clearly mentioned by WHO that there are no scientific reports which have directly demonstrated fomite transmission and in most scenarios, people who come in contact with potentially infectious surfaces and objects often have close contact with the infected COVID-positive individual as well, making it difficult to discern between droplet vs fomite transmission.[22] More recently, it has now been proposed that there is a very low risk of SARS-CoV-2 transmission by fomites in real-life situations.[23] However, these data are quite recent, and were not available during the study period and this could have led to such responses by the students. As more data has become available there is a need to improve awareness about the method of transmission.

Kissing, touching/ caressing, or having sexual intercourse with anyone suspected of having COVID-19 can definitely increase infection risk.[24] Accordingly, there is a need to avoid sexual intimacy with such persons. However, many misconceptions about sexual intimacy (kissing, unprotected sexual intercourse with spouse/unknown persons) have surfaced on social media platforms without any valid evidence. Avoiding sexual intimacy with a known partner with no contact history with any COVID patient or those without COVID-like symptoms is unwarranted. The present survey shows that such beliefs are highly prevalent among the students, which need to be corrected.

Recently, UNESCO labeled the social stigma related to COVID-19 as a global phenomenon.[25] Some questions of the survey dealt with opinions related to the chance of developing infection regarding the level of contact with infected persons, persons in quarantine, persons with travel history, persons recovered from COVID-19 infection, and health care workers. In the present study, a significant proportion of the participants had a poor understanding of these aspects. The prevalence of such misconceptions among nursing students can be considered worrisome as people look forward to the health care professionals resolving such queries. About 60% of students held the misconceptions such as "meeting an HCW on COVID duty" can lead to the spread of infection is worrisome as such beliefs can lead to stigmatization of HCWs, as reported in some of the earlier reports.[26,27] Further, about 68% of the participants believed that "infected persons who are confined to their home" can increase the risk of contracting COVID-19 infection. This can be considered a misconception, which can give rise to public stigma[28] and requires the attention of policymakers and trainers to dispel these beliefs.

Present survey also suggests that a significant proportion of the participants held the beliefs or were ambivalent about the preventive aspects of exposure to sunlight (41%), someone who has recovered from COVID-19 infection can still spread the infection (34%), spraying alcohol or chlorine all over your body can kill the COVID-19 virus (29%), and taking a hot bath (23%). Other myths like the use of cow dung, drinking alcohol, chanting religious hymns, protective aspects of BCG, and pneumococcal vaccination against COVID-19 was held by a few participants. These myths can be attributed to the widespread circulation of messages related to these on various social media platforms, and these have been negated from time to time owing to a lack of scientific evidence in favor of such claims.[7,11,12,29]

Beliefs such as Indians have a better immune system and thermal scanners can detect viruses are entirely false but were held by about half of the students. Further, about 50% of the participants also believed that the COVID-19 infection is a bioweapon developed

by China to gain power over the world, a conspiracy theory yet to be proved.[30] Similarly, about 23% believed that Muslims were responsible for the spread of COVID-19 infection, possibly due to the outbreak of COVID-19 after the congregational event of Muslims in Delhi at the beginning of the pandemic. However, holding such beliefs against a particular community or nationality can lead to more disharmonies. Hence blaming and discrimination should be avoided.

This survey has certain limitations that apply to any online survey, such as a limited number of responses. Hence, the findings cannot be generalized to all nursing students across the country. Further, the survey was limited because we used a self-designed questionnaire, for which only face validity was evaluated. Future studies must attempt to overcome these limitations.

To conclude, this survey highlights a widespread prevalence of misconceptions in nursing students regarding various aspects of COVID-19 infection, which need to be addressed and require proper education and awareness.

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