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Assessment on infection prevention and control knowledge among medical professionals in south Indian population

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Abstract

Introduction: Healthcare workers are always at higher risk of biological exposure as the healthcare setting is hazardous, and it is impracticable to exclude infection. Poor compliance with standard precautions among healthcare workers is one of the leading causes of healthcare-associated infections. This study analyzed the gaps in knowledge, attitude, and practice of infection control among healthcare workers and the influence of the COVID-19 pandemic, internet, and social media usage on infection control.

Methodology: A cross-sectional study was conducted from 1st to 31st March 2022 among various healthcare professionals using a self-administered structured questionnaire to evaluate knowledge, attitude, and practice on infection control. The impact of COVID-19, Internet, and social media usage on infection control practices was also analyzed.

Results: Among 382 healthcare workers who participated in the study, 89.4% of the participants had good knowledge, 55.26% had a neutral attitude, and all showed good practice levels on infection control. Similarly, the result showed that internet and social media usage during COVID-19 had significantly enhanced the knowledge, attitude, and practice on infection control.

Conclusions: Healthcare professionals must be frequently updated on infection control guidelines and routine training programs. The hospital's adherence to the Joint Commission International (JCI) guidelines reduces the risk of healthcare-associated infections. As observed in this study, due to the prominent influence of social media and the internet, these platforms can be exploited to provide training and awareness to healthcare professionals and the public.

Key words: Infection control; health workers; COVID-19; internet usage.

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Introduction

Healthcare workers are always at a higher risk of biological exposure as the healthcare setting is hazardous, and it is impracticable to exclude infection [1]. During hospitalization, our immune system often gets compromised, so the probability of contracting an infection becomes high. Microorganisms causing healthcare-associated infections (HAIs) are virulent, highly pathogenic, and will require high-end antibiotics. General HAIs and antibiotic use often result in antibiotic resistance, a decline in patients' health status, and the prolongation of hospital stays, thereby adding a high economic burden to patients and healthcare facilities. World Health Organization (WHO) reports that nearly 15% of hospitalized patients suffer from HAIs worldwide [2]. Moreover, in low and middle-income countries, the prevalence of HAIs at any given time varies between 5.7% and 19.1% [3].

The tragic emergence of COVID-19 has significantly affected infection control practices. The 2020 National and State Healthcare-Associated Infection Progress Report, by the Centers for Disease Control and Prevention (CDC) indicated that there was a 35 percent significant increase in standardized infection ratio for ventilator-associated events, a 24 percent hike in central line-associated bloodstream infections (CLABSI), and a 15 percent rise in hospital-onset methicillin-resistant *Staphylococcus aureus* (MRSA). However, there was a 5 percent decline in skin and soft-tissue infection (SSI) [4].

Poor compliance with standard precautions among healthcare workers is one of the fundamental bases for HAIs. Studies suggest that infection control practices are influenced by resources, guidance, and wearing Personal protective equipment (PPE), such as gloves and masks, while having direct contact with the patients [5,6]. A study conducted on the knowledge and practice of healthcare professionals on HAIs conducted by Dhupdale *et al.* [7] at Goa observed that the physicians had sound knowledge of these infections. However, their major drawback in practice was regarding ensuring sterile practices. Another study by Gupta *et al.* [8] in India on knowledge, attitude, and practice among nurses regarding infection control stressed the need to implement evidence-based Infection Prevention and Control (IPC) guidelines.

Patient safety is a critical aspect of infection prevention. As per WHO, IPC is a practical, evidence-based approach that prevents patients and health workers from being harmed by avoidable infection and antimicrobial resistance [9]. Establishing the IPC program and hospital infection Control Committee (HICC) at healthcare facilities is the initial step toward implementing IPC. IPC programs include various action plans like antiseptic policies, a training program for healthcare workers, surveillance of HAIs, and more [10]. CDC states that their public health action has improved clinical practices and procedures and has led to the development of infection control guidance and prevention [11]. Another organization, Joint Commission International (JCI), ensures uniformity and standardization of hospitals across the globe. One of the significant goals laid down by JCI is to prevent HAIs. Accepting and following the guidelines from these organizations can significantly reduce the incidence of HAIs in hospital settings.

The internet has become an integral part of everyone's life in the current era. After the emergence of COVID-19, the dependence on the internet and social media for educational purposes and information seeking has amplified. Even advancements in modern technological innovations and artificial intelligence have succored in combating infections. Artificial intelligence assists in processing medical imaging, infection tracking, drug development, diagnosis, and forecasting. Apart from these, it even aided in creating awareness and social control via the internet [12]. Even with the sophisticated advancement, one of the significant limitations is the shortage of trained healthcare workers [13]. Various initiatives have been launched by governmental and non-governmental bodies to train and educate healthcare workers.

Similarly, WHO provides many online training and webinars for healthcare workers and public healthcare professionals to upgrade their knowledge and occupational safety by protecting themselves and their patients. Adopting online care pathways can be considered for supporting clinical cases and better health decision-making [14]. Adopting and executing various action plans and prevention strategies is only possible if healthcare workers have an evidence-based approach to infection control. The main intention of this study is to explore the gaps in knowledge, attitude, and practice of infection control among healthcare workers and the influence of the COVID-19 pandemic, the internet, and social media influence on infection control.

Methodology

Research design and setting

This cross-sectional study was conducted from 1 to 31 March 2022 among various healthcare professionals, using a self-administered structured questionnaire, in Chennai city of South India. The ethical approval was obtained from the Institutional ethical committee of SRM medical college hospital and research center (SRM 2908/IEC/2021). Based on the total healthcare professional population in the study location, the sample size was calculated, and the questionnaire was circulated among healthcare workers both in paper and online platforms like google forms. Participation in the study was completely voluntary. Informed consent was taken from the study participants.

Survey Instrument

Data were collected using structured self-administered questionnaires, prepared after a thorough literature search. The prepared questionnaire was pretested in one of the medical colleges in the study location. The finalized questionnaire comprises 8 sections: socio-demographic characteristics, knowledge-based questions, attitude-based questions, and practice-based questions on infection control. An additional question has been added to find the impact of COVID-19 on infection control practices, the impact of social media and the internet on infection control practices, and the time spent on these platforms pre, post, and during COVID-19.

Scoring

The knowledge was evaluated using a 17-item scale. Each right answer was worth one point, while each wrong answer was of zero points. A total of 17 points could be obtained. Poor (9 points), moderate (9–

13 points), and good (> 13 points) were the three categories used to describe the general level of knowledge.

Twelve statements were used to assess attitudes toward infection control best practices. Each statement was evaluated using a five-point Likert scale (strongly disagree to strongly agree). With a range of 12 to 60 points, 60 points were the highest score that could be obtained. Poor (30 points), neutral (30-45 points), and positive (>45 points) attitudes were rated.

Seven questions were used to evaluate the practice of infection control standard precautions. Each right response will receive one point. There was a 7-point maximum score. Practice quality was rated as poor (<4 points), moderate (4-5 points), and good (> 5 points) overall.

Statistical Analysis

The collected data were entered into Microsoft Excel and were analyzed using SPSS statistical software version 20. Descriptive statistical analysis calculated the percentage, Mean and standard deviation. The Significance between the variables in the questionnaire was calculated using Pearson's Chi-square test. The *p*-value < 0.05 is considered significant.

Results

Social Demographic characteristics of the participants

A total of 382 healthcare workers participated in the study. Most participants were females (57.9%), and 71.1 % were in the age group between 20-25 years. Principal respondents of the study were medical students (47.6%), followed by physicians (15.8%). Nearly half of the respondents had 0-3 years of work experience, while 19.8% had more than 5 five years of experience. Also, 52.5% of the total respondents have received infection control training from their respective institutions (Table 1).

Knowledge regarding infection control

The results show that 86.9% of respondents agreed that standard precautions were followed in all patients regardless of their diagnosis, infection status, and isolation precautions. 97.4% of the participants agreed that washing hands after contact with the patient's environment is one of the elements of standard precaution. Similarly, 81.6% of participants accepted the usage of an alcohol-based hand rub after removing gloves and 97.4 % agreed that irrespective of wearing gloves, hands should be washed using soap and water before and after handling infectious materials. About 92% of participants answered that wearing PPE is essential for infection control. Participants rated wearing gloves (94.7%) and changing them during patient care (97.4%) as crucial for infection control.

Furthermore, 88.5% of respondents stated that the surgical mask and gown (PPE) protect against bodily fluids, and 73.7% accepted that removing PPE before leaving the patient environment is required. About 94.7% of respondents agreed that stationery and telephones kept in the ward are sources of infection. Similarly, 86.8% of respondents acknowledged that all linen from infectious patients should be thrown in a red linen container while ampules should be disposed of in a puncture-proof white container (89.5%). Segregating non-clinical and clinical waste (100%) and mask usage in patients with cough (92.1%) were considered vital. Nearly 76.3% of respondents admitted that recapping needles is inappropriate behaviour, while 94.7% preferred reporting any injury due to sharps to the appropriate authorities. As per the result, 89.4% of the participants have good knowledge of infection control (Table 2).

Attitude toward infection control practices

The questionnaire employed a Likert scale to assess the attitude of the healthcare workers. This section included 12 questions in total. Among all the participants, 65.8% agreed that standard precautions are not challenging to follow.

Table 1. Socio- Demographic characteristics of the participants.

Variables	Frequency (%)
Gender	
Male	161 (42.1%)
Female	221 (57.9 %)
Age Group	
20-25 years	272 (71.15 %)
26-30 years	60(15.8 %)
31-35 years	20(5.3 %)
36-40 years	30 (7.9 %)
Profession	
Physician	60 (15.8 %)
Nurse	50 (13.2 %)
Physician Assistant	10 (2.6 %)
Hospital Pharmacist	10 (2.6 %)
Pharmacy Student	20 (5.3 %)
Nursing Student	20 (5.3 %)
Medical Student	182 (47.6 %)
Other Health care professional	30 (7.9 %)
Work experience (in years)	
0-3	191(50 %)
3-5	115 (30 %)
> 5	76 (20%)
Receive training on infection control from institution	
Yes	201(52.6 %)
No	181 (47.4 %)

Table 2. Knowledge of healthcare workers about infection control practices.

Variables	Responses	
	Yes	No
Standard precautions are used for the care of all patients regardless of their diagnosis and infection status	332 (86.92 %)	50 (13.08 %)
Isolation precaution is one of the elements in standard precaution	332 (86.92 %)	5 (13.08 %)
Washing hands after contact with the patient's environment is one of the elements in standard precaution	372 (97.4 %)	10 (2.6%)
Alcohol-based rubs are used after removing gloves	312 (81.6%)	70 (18.4%)
Hands should be washed with soap and water before and after handling potentially infectious materials irrespective of wearing gloves	372 (97.4%)	10 (2.6%)
PPE is important in infection control because it acts as a barrier between infectious materials and from contaminants on your skin, mouth, nose, or eyes (mucous membranes)	352 (92.1%)	30 (7.9%)
Gloves must be worn every time during handling potentially infectious materials	362 (94.7%)	20 (5.3%)
Gloves must be changed during patient care if you move hands from 'contaminated body site' to 'clean body site'	372 (97.4%)	10 (2.6%)
Surgical masks and gown (PPE) can protect the nose and mouth when procedures and activities are likely to generate splashes or sprays of blood and body fluids	342 (89.5%)	40 (10.5%)
Remove all personal protective equipment (PPE) before leaving the patient's environment	282 (73.7%)	100 (26.3%)
Stationary, telephones kept in wards, and doorknobs can be sources of infections	362 (94.7%)	20 (5.3%)
All linen from an infectious patient should be thrown in a red linen bag even when it is free from visible blood or body fluids	332 (86.8%)	50 (13.2%)
Segregation of clinical and non-clinical waste is important for preventing the spread of infection	382 (100%)	-
Ampoules used for injection must be disposed in puncture proof white bin	342 (89.5%)	40 (10.5%)
Recapping of needles, in general, is not appropriate	291 (76.3%)	91 (23.7%)
If you puncture hand with sharp instruments, you must report to the concerned authorities	362 (94.7%)	20 (5.3%)
Mask must be placed on coughing patients to prevent potential dissemination of infectious respiratory secretions from the patient to others	352 (92.1%)	30 (7.9%)
Overall level of knowledge		
Poor	0	
Moderate	40 (10.52%)	
Good	342 (89.48%)	
Mean score (± SD)	15.394 ± 1.461	
Knowledge Level	Good	

PPE: Personal Protective Equipment; Mean score Interpretation: Poor (<9), Moderate (9:13), Good (>13).

Table 3. Attitude of healthcare workers about infection control practices.

Variables	Responses				
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Standard precaution is not easy to follow	19 (13.2%)	110 (28.9%)	60 (15.8%)	131 (34.2%)	30 (7.9%)
Standard precautions prevent the spread of infections from patients to HCWs and vice versa	171 (44.7%)	161 (42.1%)	50 (13.2%)	-	-
Infectious diseases can be treated hence PPE are not required	30 (7.9%)	40(10.5%)	70 (18.4%)	110 (28.9%)	131 (34.2%)
Prefers to perform hand hygiene before and after any intervention with patients	191 (50%)	121 (31.6%)	70(18.45%)	-	-
PPE can be used during emergencies	60 (15.8%)	151 (39.5%)	81 (21.1%)	70 (18.4%)	20 (5.3%)
Changing gloves is not necessary during procedures even if heavily contaminated	30 (7.9%)	50 (13.2%)	40 (10.5%)	110 (28.9%)	151 (39.5%)
It is difficult to work wearing PPE	70 (18.4%)	181 (47.4%)	91 (23.7%)	30 (7.9%)	10 (2.6%)
Healthcare providers should ensure the availability of adequate protective barriers	161(42.1%)	181(47.4%)	40 (10.5%)	-	-
Health care workers should not use PPE because it may harm patients psychologically	10 (2.6%)	50 (13.2%)	81(21.1%)	131 (34.2%)	110 (28.9%)
Adequate disinfection of medical equipment should be ensured by all HCWs	171 (44.7%)	151 (39.5%)	60 (15.8%)	-	-
Transmission of infectious organisms can be reduced by adhering to standard and contact precautions	191 (50%)	17 (44.7%)	20 (5.3%)	-	-
It is not logical to assume all patients contagious unless their infection has been confirmed	60 (15.8%)	131 (34.2%)	60 (15.8%)	101 (26.3%)	30 (7.9%)
Overall level of attitude					
Negative			0		
Neutral			211 (55.26%)		
Positive			171 (44.73%)		
Mean score (± SD)			44.32619 ± 6.395381		
Attitude Level			Neutral		

HCW: Healthcare workers; PPE: Personal Protective Equipment; Mean score Interpretation: Poor (< 30), Neutral (30-45), Good (> 45).

While most of the respondents strongly agreed or agreed that standard precautions help prevent infection (44.7% and 42%). Similarly, 34.2% strongly disagreed that PPE is unnecessary, while 39.5% agreed that PPE could be used during emergencies. Half of them strongly agreed with hand hygiene, whereas half of the respondents agreed that changing gloves is unnecessary. About 47.4% agreed that it is challenging to work while wearing masks. While 39.5% and 44.7% agreed that healthcare workers should ensure the disinfection of medical equipment and that standard precautions reduce transmission, respectively. Similarly, 34.2% agreed it is illogical to answer that a patient is contagious before the infection is confirmed. The study results show that most respondents (55.26%) have a neutral attitude toward infection control practices (Table 3).

The practice of infection control

The questionnaire has seven practice-based dichotomous questions, which were employed to assess the practice aspect of infection control. The result shows that good hand hygiene practices were carried out by healthcare workers during patient contact (94.7%), after removing gloves (92.1%), and during contact with bodily fluids (97.4%). Furthermore, 94.7% admitted that they wore gloves while drawing blood samples, administering parentals, and dressing wounds and 97.4% admitted that they even wore gloves while disposing of the patient sample. About 92.1 percent wore PPE while performing procedures involving splash of body fluids. As per the result obtained (Mean 6.605 ± 0.718086), the participant's overall level of infection control practice was 100%, which is noteworthy (Table 4).

Impact of COVID-19 on infection control practices

The impact of COVID-19 is one of the critical factors to be considered in infection control practice. The study found that 84.2% accepted that the frequency of PPE use has spiked since the emergence of COVID-19. Per the response, the frequency of disinfecting the workspace (92.1% of respondents) and equipment (97.4% of respondents) has risen in the post-COVID-19 pandemic. All the respondents agreed that the frequency of handwashing and antiseptics increased

Table 4. Practice of healthcare workers on infection control.

Variables	Responses	
	Yes	No
Do you always perform hand hygiene when you come in contact with patients.	362 (94.7%)	20 (5.3%)
Do you always perform hand hygiene after taking off gloves	352(92.1%)	30 (7.9%)
Do you always wash hands immediately after coming in contact with any blood, body fluid, secretion, excretion, or dirty substances	372 (97.4%)	10 (2.6%)
Do you always wear gloves when drawing blood samples.	362 (94.7%)	20 (5.3%)
Do you always wear gloves when disposing patients samples	372 (97.4%)	10 (2.6%)
Do you always wear gloves during administration of parenteral injections and wound dressing	362 (94.7%)	20 (5.3%)
Do you always wear PPE when performing operations/procedures that might induce the spraying of blood, body fluid, secretions, or excretions.	352 (92.1)	30 (7.9)
Overall level of practice		
Poor	0	
Moderate	0	
Good	382 (100%)	
Mean score (± SD)	6.605 ± 0.718086	
Practice level	Good	

PPE: Personal Protective Equipment; Mean score Interpretation: Poor (< 4), Moderate (4-5), Good (> 5).

Table 5. Impact of COVID-19 on infection control practices.

Variable	Response	
	Improved	No change
The frequency of PPE use in post- COVID Era	322 (84.2%)	60 (15.8%)
Frequency of disinfection of workspace in post- COVID Era	352 (92.1%)	30 (7.9 %)
Frequency of disinfection of tool/equipment in post- COVID Era	372 (97.4 %)	10(2.6 %)
Frequency of hand washing/use of antiseptics in post- COVID Era	382 (100%)	-
Overall impact of COVID-19		
Improved	322 (84%)	
No change	60 (16%)	
Impact level	Improved	

PPE: Personal Protective Equipment.

after the pandemic. Hence, 322 out of 382 respondents concurred that the COVID pandemic positively impacted infection control (Table 5).

Influence of internet and social media in promoting infection control practices

The average time spent on social media platforms intensified after the unfolding of the COVID-19 pandemic. Before COVID-19, nearly 23.7% of healthcare workers spent less than 1 hour, and 21.1% spent 3 hours on social media. Whereas after and during the lockdown period, a significant shift was observed. Around 28.9% of participants spent 3 hours, and 26.3% spent more than 5 hours on social media. Further, 44.7% responded that social media had moderately improved their practice regarding infection control, while 39.5% responded that it had moderately improved their practice (Table 6).

Factors influencing the knowledge, attitude, and practice of infection control

The study observed a significant relationship ($p < 0.05$) between the age group and infection control knowledge and attitude. There was also a significant association between knowledge and attitude among healthcare workers with more than five years of experience in infection control ($p < 0.05$). Among healthcare workers with experience of 3-5 years, the practice aspect of infection control has a significant relationship ($p < 0.05$). The influence of internet usage during COVID-19 ($p < 0.05$), as well as social media ($p < 0.05$), has significantly enhanced the knowledge, attitude, and practice of infection control practices among healthcare workers (Table 7).

Discussion

This study is the first to evaluate the knowledge, attitude, and practice of infection control among health professionals, its impact during COVID-19, and the influence of the internet on infection control practices in south India. The study results show that knowledge and practice of infection control among health professionals were above satisfactory, whereas the attitude towards infection control shows a neutral approach. Similar findings were found in Thazha *et al.* [15] the study, which revealed high infection control knowledge among health workers. Even though the results show satisfaction, the study results indicate that there are still gaps in health professionals' knowledge, attitude, and practices regarding infection control. Understanding the factors influencing health professionals' knowledge, attitudes, and behaviours concerning infection control is critical in the context of the COVID-19 pandemic. The results indicate that the health professionals' age, work experience, and training have significantly influenced the knowledge regarding infection control. Wu *et al.* [16] also revealed the same results in their study. On the contrary, a study conducted by Al-Ahmari *et al.* [17] showcased no relevant correlation between socio-demographic factors on infection control. Among these factors influencing infection control practices, training on infection control is the best way to improve infection control among health professionals. A study conducted by Illiyasu *et al.* [18] in Nigeria to assess the knowledge and practice of infection control among healthcare workers suggested that refresher training at regular intervals would be beneficial. Our study also shows that health professionals who have had an experience of more than five years, as well as professionals who have received training, show better knowledge, attitude, and practice regarding infection control. Similar results were

Table 6. Impact of internet and social media on infection control practices.

Variable	Responses			
	Highly Improved	**Moderately Improved**	**Mildly improved**	**Not at all improved**
To what extend do you think Internet /social media platforms improved your knowledge regarding infection control practices.	151 (39.5%)	171 (44.7%)	40 (10.5%)	20 (5.3%)
To what extend do you think Internet /social media platforms influenced your attitude towards infection control practices.	181 (47.4%)	161 (42.1%)	20 (5.3%)	20 (5.3%)
To what extend do you think Internet /social media platforms influenced your practice regarding infection control guidelines.	151 (39.5%)	171 (44.7%)	40 (10.5%)	20 (5.3%)
Overall impact of Internet and social media				
Improved	362 (95%)			
Not Improved	20 (5%)			
Impact Level	Improved			

observed in a study conducted by Bayleyegn *et al.* [19] and Desta *et al.* [20] where age and experience showed a significant relationship. Based on the mean score of points obtained, the participants showed a good level of knowledge regarding infection control. The results show that a significant percentage of the health professionals had a high level of knowledge regarding hand hygiene practices and waste disposal procedures. Improved knowledge of infection control is one of the best indicators of progress in implementing quality standards in hospitals. Similarly, most healthcare professionals agreed that the advent of the COVID-19 pandemic required updating their knowledge of infection control. Social media has significantly influenced health professionals and the general public during the COVID-19 pandemic, enabling the government and other health authorities to share information about infection control practices.

Infection control practices were perceived with a neutral attitude, according to the mean score of points obtained. However, it can still be considered a good transition compared to the previous studies [21,22]. This neutral attitude among health professionals can be due to the carefree attitude in some of them, a heterogeneous group of health professionals with different levels of education, or may be due to a lack of strict implementation of infection control guidelines in their respective institutions. Interestingly, the study found that the younger generation has a more positive attitude toward infection control. This result shows an optimistic attitude among the future generation toward infection control practices. The study found that work experience and training received on infection control were significant factors influencing the attitudes of healthcare professionals. A study conducted by Abalkhail *et al.* [23] also revealed that healthcare workers with more the 6 years of experience exhibited a more positive attitude than others. In the aspect of infection control attitude, the study finds that the COVID-19 pandemic does not improve attitude statistically toward infection control. Nevertheless, as per the study results, social media has significantly changed attitudes regarding infection control.

In infection control practices, health professionals show a high level of practice as per the mean score of points. The results show that the age, work experience, and training received significantly relate to infection control practice. A similar result was seen in the study conducted by Abalkhail *et al.* [23]. Similarly, the COVID-19 pandemic has significantly influenced infection control practices among health professionals. This finding is similar to the studies conducted in Ethiopia and China, where the risk of covid has brought good practice behaviour among healthcare workers. During the COVID-19 Pandemic, the usage of hand rubs, sanitizers, masks, and PPE was at its peak among the public. Various sources emphasized the precautionary measures and knowledge about hand hygiene practices and social distancing, which had a massive reach among the public and health care

Table 7. Factors influencing the knowledge, attitude, and practice of infection control.

Characteristics	Knowledge			Attitude			Practice		
	Poor / Moderate	Good	*p* value	Poor/ Moderate	Positive	*p* value	Poor / Moderate	Good	*p* value
Gender									
Male	17	144	0.67	89	72	0.07	0	161	0.61
Female	23	198		122	99		0	221	
Age Group									
20-25 years	28	243	< 0.05*	150	122	0.58	0	272	< 0.05*
26-30 years	6	54		33	27		0	60	
31-35 years	2	18		11	9		0	20	
36-40 years	4	27		17	13		0	30	
Work Experience									
0-3	20	171	< 0.05*	106	86	< 0.05*	0	191	< 0.05*
3-5	12	102		63	51		0	115	
>5	8	109		213	34		0	76	
Received training on infection Control									
Yes	21	180	< 0.05*	111	90	< 0.05*	0	201	0.08
No	19	162		100	81		0	181	
COVID-19 influence									
Improved	34	288	< 0.05*	178	144	< 0.05*	0	322	< 0.05*
No change	6	54		33	27		0	60	
Internet and Social Media Influence									
Yes	38	324	< 0.05*	200	162	< 0.05*	0	362	< 0.05*
No	2	18		11	9		0	20	

**p* value significant.

professionals. The findings show that social media and the internet greatly impacted infection control practices among health professionals during the COVID-19 pandemic.

Conclusions

Infection control practices play a significant role in combating and breaking the chain of transmission of infections. Frequent training programs and adherence to the hospital's Joint Commission International (JCI) guidelines reduce the risk of HAIs. Knowledge and practice of these infection control practices reached a soaring peak during this covid pandemic, with credit to social media and the internet, which played a considerable role. The prominent influence of social media and the internet can be exploited to provide training and awareness to healthcare professionals and the public. Similarly, sensitization programs on infection control practices initiated by schools significantly impact the future.

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