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ADHERENCE OF HEALTHCARE STAFF TO INFECTION PREVENTION AND CONTROL GUIDELINES IN THE GOVERNMENT HEALTH SECTOR IN THE KINGDOM OF SAUDI ARABIA

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Abstract

Objectives: This study aimed to evaluate the adherence Of healthcare staff (HCSs) in the government health sector in Saudi Arabia to infection prevention and control (IPC) practices and to identify the factors that influence their compliance, utilizing the Health BeliefModel as the theoreticalframework.

Design: The research utilized quantitative data from an explanatopy sequential mixedmethods study.

Participants and settings: Between May 17 and August 30, 2022, a total of 604 healthcare stafffrom randomly selected tertiary carefacilities in the government health sector in Saudi Arabia participated in the study.

Primary' and secondary outcome measures: The primary outcome was the level of compliance with the IPC guidelines provided by the World Health Organization (WHO), along with identifying the associatedfactors influencing compliance.

Results: The study revealed a mean compliance score of 0.49 (+0.25) on a scale of O to 1. HCSs demonstrated the highest compliance with medical mask wearing guidelines (81%)

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and the lowest compliance with high-touch surface decontamination regulations (23%). Compliance with IPC guidelines were significantly associated with factors such as increasing age, female sex, working as a nurse, having non-communicable diseases, and previous exposure to patients with COVID-19. Compliance was positively associated with peweived benefits (B=O.()39, 95% CI 0.001 to 0.076), self-efficacy (B=0.101, 95% CI 0.060 to 0.142), and cues to action (B=().045, 95% CI 0.002 to 0.088). Participants who reported low peweived barriers had O. 061 times greater compliance with IPC guidelines compared to those with high perceived barriers.

Conclusion: The overall compliance with WC' guidelines among HCSs in the government health sector in Saudi Arabia was found to be unsatisfactory. The study highlights the importance of emphasizing self-efficacy in interventions aimed at improving HCSs' adherence to IPC practices. Additionally, interventions should address perceived barriers, including unreliable information sources, unsafe working conditions, and inadequate availability ofpersonal protective equipment. Furthermore, cues to action, such as trust in the administration and the provision of adequate IPC guidance, should be considered in interventions to enhance compliance.

Keywords: public health, infection control, preventive medicine.

Introduction

Healthcare staff, especially physicians and nurses, are vital to the functioning of a country's healthcare system. It is crucial to protect them from infections while they provide care to patients, as failure to do so can have a negative impact on patient management and pose risks to their own health. Despite the World Health Organization (WHO) issuing interim guidance on infection prevention and control (IPC) strategies in March 2020, a significant number of healthcare staff (HCS) have been infected with COVID-19 in various countries, including Saudi Arabia(Bielicki et al., 2020; Zhang et al., 2020). Additionally, studies have shown that the appropriate use of personal protective equipment (PPE) effectively prevents infections among HCS(Liu et al., 2020).

Healthcare-associated infections (HAIs) pose significant challenges for healthcare providers, infection control specialists, public health authorities, and patients. In the context of developing countries, the risk of contracting HAIs is estimated to be up to 20 times higher compared to developed countries, resulting in infection rates of up to 25% (Abalkhail et al., 2017; Ayed et al., 2019). A recent report by the Centre for Disease Control (CDC) highlighted that nursing homes report more than 3 million cases of HAIs annually, some of which led to patient deaths or disabilities (Cruz & Bashtawi, 2016). HAIs are associated with increased mortality, morbidity, prolonged hospital stays, antibiotic resistance, and elevated healthcare costs (Allegranzi et al., 2013). In the United States alone, it is estimated that HAIs contribute to 44,000 to 98,000 unexpected deaths, with the associated costs ranging from USD 17 to 29 billion. National and multicenter studies have reported HAI rates between 3.5% and 12% in high-income countries, while rates in lowincome countries range from 5.7% to 19.1% (Fineschi, 2019).

Within the government health sector of Saudi Arabia, HAIs are a significant concern. The risk ofHAIs in this setting and the associated consequences, including mortality, morbidity, and economic burdens, need to be addressed. By implementing effective infection control measures, surveillance systems, and interventions, the incidence of HAIs can be reduced, leading to improved patient outcomes, decreased healthcare costs, and enhanced overall healthcare quality.

However, compliance with IPC guidance among HCS has been found to be suboptimal even before the pandemic, and this trend has continued during the COVID-19 pandemic in several countries, including Saudi Arabia(Gammon et al., 2008). Various factors contribute to their low adherence to IPC practices, such as inadequate supply of protective resources, insufficient guidelines on their usage, increased workload, and fatigue(Houghton et al., 2020). To improve adherence to IPC practices among HCS, it is important to employ theory-based analysis of human behavior(Kretzer & Larson, 1998). In the government health sector of Saudi Arabia, where the COVID-19 pandemic has had a significant impact, it is necessary to assess HCS' compliance with IPC guidance and identify associated factors. This study aims to address this knowledge gap by adopting the Health BeliefModel (HBM), which is widely used in research focusing on behavioral changes. By understanding the factors influencing HCS' adherence to IPC practices, appropriate interventions can be developed to support and improve compliance with guidelines, thereby safeguarding the health of HCS and maintaining a functional healthcare system.

Organization of the Healthcare System in KSA

Saudi Arabia has a significant presence of private sector healthcare services, comprising a total of 125 hospitals with 11,833 beds and 2,218 dispensaries and clinics primarily located in major towns and cities (Abouzeid & Tayeb, n.d.). In terms of hospital bed capacity, Saudi Arabia currently has over 53,000 beds per 1,000 residents. When combined with the public sector, the country's bed-to-population ratio exceeds 70,000 beds. The healthcare system in Saudi Arabia is divided into primary, secondary, and tertiary levels. Primary healthcare services are provided to all individuals in the country, while specialized treatments are available at select private and public facilities. Referrals to hospitals such as the King Faisal Specialist Hospital, higher education hospitals (teaching hospitals), and research centers are made when necessary (Abouzeid & Tayeb, n.d.; Alkhamis, 2012). The public sector plays a crucial role in delivering healthcare services across all levels, ranging from primary healthcare to tertiary healthcare, as well as high-risk and emergency services. Rather than competing, some government hospitals are designed to complement each other, with specific hospitals dedicated to cancer treatment, pediatrics, maternity care, and other specialties. Free treatment is provided to Saudi Arabian citizens, as well as government contractors, including employees and families of organizations such as Aramco (Alkabba et al., 2012). The services offered by the public sector differ significantly from the general hospital healthcare services provided by the private sector, as public sector healthcare is accessible to all Saudi citizens free of charge at the point of delivery.

The World Health Organization (WHO) has ranked the healthcare system in Saudi Arabia as the 25th best system in the world, surpassing the rankings of many developed nations (Al-Hanawi et al., 2019). The healthcare workforce in Saudi Arabia consists of 423,940 healthcare staff, with physicians and nurses accounting for 248,000 of them.

Infection Prevention and Control in Healthcare System in KSA

In Saudi Arabia (KSA), infectious diseases have resulted in significant loss of life, despite the fact that most of these diseases can be treated or prevented. The Ministry of Health (MOH) reports that brucellosis, chickenpox, and amoebic dysentery are the most common chronic infections that are easily transmitted among the population in KSA. To address this issue, healthcare facilities in KSA have established IPC quality assurance departments responsible for implementing infection control programs and guidelines. IPC is an emerging discipline in KSA, and the Saudi MOH has taken the lead in establishing several centers for disease control and prevention at the national level. For instance, the Commandand-Control Centre (CCC) was established with the objectives of enhancing infection prevention and establishing infection tracking systems both in KSA and worldwide. External agencies such as the Centers for Medicare and Medicaid utilize hospital data to monitor hospital performance related to IPC (Abouzeid & Tayeb, n.d.).

In accordance with regulations, every healthcare facility in Saudi Arabia is obligated to develop, establish, and coordinate an IPC program aimed at identifying and reducing the risk of infection acquisition and transmission among patients, staff, and visitors (Colet et al., 2018). The MOH has facilitated the establishment of infection control services in all its hospitals and provides training on infection control to healthcare staff through in-house programs and field epidemiology training. Furthermore, the Saudi Council for Health Specialties has established a subspecialty training institution in infectious diseases within internal medicine and pediatrics to meet the increasing domestic demand. As a result, a substantial number of Saudi internists and pediatricians have now received national training (Ronald & Memish, 2001). Assiri et al. conducted a cross-sectional interview-based study in 2014 to describe and evaluate the status of IPC programs in KSA. The study focused on the eight core components Of IPC programs that are considered crucial for enhancing capacity in preventing healthcare-associated infections (HAIs). Each healthcare facility was assigned a combined score for these eight components, which include the organization of IPC programs, technical guidelines, human resources, HAI surveillance, microbiology lab support, environment, monitoring and evaluation, and public health links. The study's findings revealed that the combined scores of the facilities ranged from 42% to 57%.

Study Limitations

- Spatial Limitations: The study will be conducted in Riyadh, Saudi Arabia.
- Temporal Limitations: The study will be conducted in the year 2022.
- Human Limitations: The study will be conducted on a sample of healthcare staff in the government health sector in Riyadh.

- Subjective Limitations: The study is limited to investigating Adherence of healthcare staff to infection prevention and control guidelines in the government health sector in the Kingdom of Saudi Arabia.

Methods

Study design

Quantitative data were gathered within the framework of a sequential explanatory mixedmethods research, the methodology of which had been previously documented in a published study(Salwa et al., 2020).

study setting

This study was conducted in the government health sector in Saudi Arabia.

Population

The study population consists of all healthcare staffin the governmental healthcare sector in Riyadh city.

Study sample

The study sample, selected from the study population, comprises a subset of individuals or elements representing the population accurately. The sample is chosen based on scientific criteria, utilizing random or non-random selection methods. The researchers selected a random sample of 604 healthcare staff from the governmental healthcare sector in Riyadh city.

Study variables

The dependent variable in this study was the compliance ofhealthcare staff (HCSs) in the government health sector of Saudi Arabia with infection prevention and control (IPC) practices. The World Health Organization (WHO) provided interim IPC guidance for HCSs during the COVID-19 pandemic, which included the use of personal protective equipment (PPE) such as gloves, masks, eye protection, disposable gowns, as well as maintaining hand hygiene, sterilizing patient care equipment and linen, and promptly isolating patients with suspected COVID- 19.

To assess compliance with the IPC guidance, the study considered 12 specific IPC practices. The survey included four questions related to the use Of PPE, two questions regarding the donning and doffing of PPE, two questions related to disinfecting surfaces and patient care equipment, and four questions focused on hand hygiene practices before and after direct patient contact, before performing aseptic procedures, after exposure to patient body fluids, and after exposure to the patient's surroundings.

In addition to these questions, participants were asked if they had performed any aerosolgenerating procedures in the past month. Those who answered affirmatively were asked additional items about using N95 respirators or equivalent and waterproof gowns during the procedure, as recommended by the WHO. Participants were also asked to report the frequency of each IPC practice over the past month using a four-category frequency scale: rarely (<20%), sometimes (20%-50%), most of the time (50%-95%), and always (>95%).

Compliance with each IPC practice was determined by whether participants reported performing the practice in more than 95% of cases. A score of I was assigned for compliant practices and O for non-compliant practices. Finally, a total compliance score was calculated by dividing the number of IPC practices marked as compliant by the total number of reported practices. The resulting compliance scores ranged from O to l, with higher scores indicating better compliance [l O].

Independent variables

Socioenvironmental variables Data on participants' age, sex, profession (nurse, physician, pharmacist, specialist, technician or administrative), history ofnon-communicable diseases (NCDs), exposure to confirmed patients with COVID-19 or their belongings, shifting from usual living place, and attending training or semmar on COVID-19 were recorded. Participants were asked to report any clinically diagnosed NCDs, such as diabetes, cardiovascular diseases, asthma, chronic obstructive pulmonary diseases, hypertension, chronic kidney diseases, etc. They were also asked about their living place before and during the COVID-19 pandemic to determine if their work obligations necessitated temporarily moving to another address.

HBM constructs Six HBM constructs (perceived benefits, perceived barriers, perceived susceptibility, perceived severity, self-efficacy and cues to action) were explored in this study and were rated by the participants on a 5-point Likert-type scale. As several statements were provided for each construct, participants' total scores for each construct were compared with the median value and were dichotomised into low and high categories (Sullivan & Artino, 2013).

Perceived benefits were assessed through seven questions probing into the effectiveness of using PPE and maintaining hand hygiene in preventing COVID- 19 infection. The perceived barriers were also assessed via seven questions related to PPE availability, workplace safety and reliability of the common sources of information about COVID-19. Higher scores indicated greater perceived barriers.

Perceived susceptibility was assessed by asking participants to rate the likelihood of COVID-19 infection during the study period for themselves, their family members and the general population. Perceived severity was measured via eight questions regarding the nature of COVID-19, its effects on health and personal life, long-term consequences, etc. The perceived risk was subsequently calculated by multiplymg each participant's total scores for perceived susceptibility and perceived severity.

We also probed into participants' perceptions on the following issues in the realms of cues to action: their trust in hospital administration, health system and policymakers to do the right things to protect them from COVID-19; their willingness to take personal risks to provide healthcare during this period; and their perception on available guidelines as sufficient in protecting them from COVID- 19. When assessing participants' perceived selfefficacy, focus was given to their belief in their ability to perform the IPC practices and their resilience in preventing SARS-CoV-2 infection. A summary of HBM constructs and their internal consistency reliability is shown in table I.

Table 1

Items, score range and intemal consistency of HBM constructs

Classification					
Self-efficacy	5	0.666	5-25	5_16	17 - 25

Cues to action	7	0.811	7-35	7-24	25-35
Perceived benefits	7	0.875	7-35	7-28	29-35
Perceived barriers	7	0.728	7-35	7-19	20-35
Perceived susceptibility	4	0.535	4_20		
Perceived severity	8	0.722			
Perceived risk*	12	0.741	32-800	32-527	528-800

Statistical analysis

Descriptive analysis was conducted to examine the socioenvironmental characteristics of the study participants. For continuous variables such as age, the number of reported noncommunicable diseases (NCDs), and the number of attended training or seminar sessions, the mean and standard deviation (SD) were calculated.

To assess the predictors of healthcare staff (HCSs) compliance with infection prevention and control (IPC) guidance, a hierarchical multiple regression model was constructed. The model included socioenvironmental variables in step I and Health Belief Model (HBM) constructs in step 2. The correlation among the independent variables was examined, and no correlation exceeded 0.7, indicating no issues with multicollinearity. Additionally, there was no evidence of multicollinearity based on tolerance values and variance inflation factor (VIF) values. The normal probability-probability (P-P) plot of the regression standardized residuals of the dependent variable indicated that the model assumptions were met, ensuring the validity of the inferences.

In Step l, socioenvironmental variables were entered into the regression model, followed by the inclusion of HBM constructs in step 2. The associations between the predictors and compliance were reported using both unstandardized regression coefficients (B) and standardized coefficients (beta). Statistical analysis was performed using the Statistical Package for Social Sciences (SPSS) version 23. A significance level of p<O.05 was considered statistically significant.

In the study, informed written consent was obtained from all participants before data collection.

Result

The study found that approximately 57% of the participants were female, and around 84% reported having at least one non-communicable disease (NCD) according to Table 2. In terms of compliance with infection prevention and control (IPC) guidance, better compliance was observed among women, nurses, individuals who had prior exposure to patients with COVID-19, and those who had to change their usual living arrangements due to the pandemic. Furthermore, participants who scored higher on the perceived benefits, perceived risks, cues to action, and self-efficacy scales, and lower on the perceived barriers scale, demonstrated significantly better compliance with IPC practices.

Table 2

Characteristics of participants with their compliance score (N=604)

	Categories	Frequency (%)	Compliance score Mean (SD)	P value
Socioenvironmental variables				
Age	Mean (±SD)			
Sex				
	Female			
	Male			
Profession				
	Nurse			
	Physician			
	Pharmacist			
	Specialist			
	Technician			
	Administrative			
Presence of at least one NCD				
Yes				
No				
Number of NCDs	Mean (±SD)			
Exposure to COVID-19				
Yes				
No				
Shift from usual living place				
Yes				
	No Attending COVID-19-related training/seminar			
Yes				
	No Number of training/seminars Mean (±SD) attended			
HBM constructs				

Perceived benefits

Low

High

Perceived batTiers

Low

High

35.32 (7.53)

342 (56.6)

262 (43.4)

241 (40)

67 (11)
48 (8)

108 (18)
61 (10)
79 (13)

508 (84.1)

96 (15.9)
0.43 (0.66)

294 (48.7)

310 (51.3)

177 (29.3)

427 (70.7)

292 (48.3)

312 (51.7)
0.95 (1.39)

263 (43.5)

341 (56.5)

333 (55.1)
271 (44.9) <0.001

0.54 (0.26)

0.43 (0.23)

<0.001

0.58 (0.26)

0.43 (0.24)

0.41 (0.23)

0.45 (0.20)

0.42 (0.26)

0.39 (0.22)

0.50

0.50 (0.25)

0.49 (0.26)

<0.001

0.54 (0.26)

0.45 (0.24)

<0.001

0.55 (0.29)

0.47 (0.24)
0.02

0.47 (0.24)
0.52 (0.27)

0.002

0.46 (0.25)

0.52 (0.26)

<0.001

0.56 (0.26)

0.41 (0.22)

	Categories	Frequency	Compliance score Mean (SD)	value
Perceived risks		314 (52.0)		<0.001
		290 (48.0)		
Self-efficacy				<0.001
Cues to action	Low	236 (39.1)	0.53 (0.26)	
	High	368 (60.9)	0.46 (0.24)	
	Low		0.39 (0.23)	<0.001
	High	306 (50.7)	0.56 (0.25)	
	Low	298 (49.3)	0.42 (0.24)	
	High		0.57 (0.25)	

Approximately 43% of the respondents reported wearing gloves in more than 95% of cases when working with patients, while compliance with using medical masks was observed in 81% of the sample. Compliance with wearing face shields, goggles, or protective glasses was found in nearly 30% of the respondents. Notably, there was a significant difference in adherence to infection prevention and control (IPC) practices between healthcare staff. Physicians demonstrated higher compliance with guidelines for wearing masks and gloves, as well as maintaining hand hygiene after touching patients' surroundings. On the other hand, nurses exhibited higher compliance than physicians with the remaining IPC practices. This information is represented in Figure l.

Compliance with IPC guidance

Disinfect medical equipment

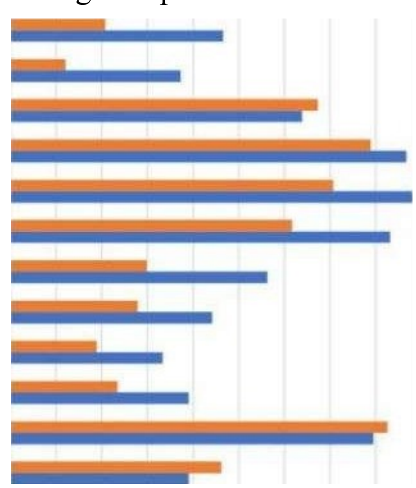
Decontaminate high touch surface

HH after touching patient's surrounding HH after exposure to body fluid HH after performing clean or aseptic procedure

HH before and after touching patient

Proper doffing

IPC practices



Proper donning Using disposable gown

Wearing face shield/goggles/protective glass

Wearing medical mask Using disposable gloves

Regression coefficientt

ofB

Lower Upper P value

0 10 20 30 40 50 60 70 80 90 100

Percentage of participants

Physician Nurse

Figure I

Percentage of participating healthcare providers compliant with IPC guidance. HH, hand hygiene; IPC, infection prevention and control.

In the hierarchical regression analysis, the model initially explained approximately 16% of the variance in healthcare staff (HCSs) compliance with infection prevention and control (IPC) guidance after socioenvironmental variables were entered in step 1 . However, when Health Belief Model (HBM) constructs were included in step 2, the total variance explained by the model increased to 25.4% (F (12, 591) — 16.76, p < 0.001).

Compliance with IPC guidance was significantly associated with several factors, as shown in Table 3. Age was positively associated with compliance, indicating that as age increased, HCs tended to exhibit better compliance with IPC guidance (B — 0.005, 95% CI 0.002 to 0.008). Female HCS and nurses demonstrated significantly higher compliance compared to their male counterparts or other healthcare professions. Additionally, HCSs who reported direct contact with patients with COVID-19 or their belongings exhibited significantly better compliance (B = 0.070, 95% CI 0.030 to O. I I O). Moreover, participants with chronic diseases had a positive association with compliance, indicating that those with a history of non-communicable diseases (NCDs) were more compliant with IPC practices.

Table 3

Predictors of compliance with IPC guidance among healthcare staff (N=604)

Socioenvironmental				
Age	0.005	0.002	0.008	0.142
Sex				
Female (reference)				

Male	—0.050	—0.099	—0.001	—0.098	0.
Profession					
Nurse (reference)					
Physician	—0.077	—0.130		—0.148	0.005*
Shifting from usual living place					
No (reference)					
Yes	0.030	—0.014	0.074	0.053	0.18
Number of NCDs	0.029	0.001	0.058		0
Exposure to COVID-19				0.075	
No (reference)					
Yes	0.070	0.030	0.110	0.137	0.001*
Training/seminar attended	0.003	—0.035	0.042	0.006	0.87
HBM constructs					
Perceived benefits					
Low (reference)					
High	0.039	0.001	0.076	0.075	0
	Regression	coefficientt of B			
		Lower	Upper		P value

Perceived barriers					
Low (reference)					
High	—0.061	—O. 103	—0.019	-0.119	0.004*
Perceived risk					
Low (reference)					
High	—0.018	—0.057	0.020	—0.036	0.35
Self-efficacy					
Low (reference)					
High	0.101	0.060	0.142	0.193	
Cues to action					
Low (reference)					
High	0.045	0.002	0.088	0.088	04 *

*Significant at p<O.05. R2=25.4%, adjusted R2-24.0%, F (12, 591)=16.76,p<O.001, R2 change-9.3%, F change (5, 591)-14.79, p<O.001.

HBM, Health Belief Model; IPC, infection prevention and control; NCD, noncommunicable disease.

Individuals who scored higher on the perceived benefits scale demonstrated greater compliance with infection prevention and control (IPC) guidance (B = 0.039, 95% CI 0.001 to 0.076). Similarly, higher scores on the self-efficacy scale were associated with increased compliance (B = O. 101 , 95% CI 0.060 to O. 142). Additionally, higher scores on the cues to action scale were positively associated with compliance (B = 0.045, 95% CI 0.002 to 0.088). On the other hand, high perceived barriers were linked to significantly lower compliance with IPC guidance.

Discussion

Compliance with infection prevention and control (IPC) guidance among healthcare staff (HCS) has been extensively studied in order to develop effective intervention programs for improvmg compliance. This study provides a comprehensive overview ofHCS compliance with IPC guidance recommended by the World Health Organization (WHO) and identifies socioenvironmental and cognitive factors that influence their compliance.

While overall compliance with IPC guidance among the study participants was found to be unsatisfactory, hand hygiene practices among HCS were better compared to the prepandemic period, as previously observed in a nationwide study(Horng et al., 2016). Additionally, another study conducted in China reported improved but still unsatisfactory IPC behavior among Chinese HCS after the COVID-19 outbreak, indicating a positive impact of the pandemic on IPC compliance among healthcare professionals(Lai et al., 2020).

The study found that older HCS were more compliant with IPC guidance compared to their younger colleagues, possibly due to older age being identified as a major risk factor for severe forms of COVID-19(Dowd et al., 2020). This finding is consistent with previous evidence suggesting that older HCS and those with non-communicable diseases (NCDs) are more compliant with protective behaviors(Lai et al., 2020). Older age has also been associated with an increased ability to cope with emergencies related to infectious diseases. On the other hand, previous studies have reported good IPC practices among younger HCS in Nigeria before the COVID- 19 pandemic, while no relationship with age or sex was found in another study(Aliyu, 2019).

Among the six constructs Of the Health Belief Model (HBM), self-efficacy emerged as the strongest predictor of HCS compliance with IPC guidance in this study. Higher selfefficacy, which refers to participants' belief in their ability to perform IPC practices and protect themselves from SARS-CoV-2 infection, was significantly associated with increased compliance. Self-efficacy is a well-established factor in initiating and maintaining health-promoting behaviors. It has also been shown to facilitate social distancing and other respiratory infection prevention behaviors, such as wearing masks and practicing hand hygiene, during previous infectious disease outbreaks(Bults et al., 2011).

The findings also align with the HBM, which suggests that if individuals perceive a health action as beneficial in preventing a specific illness, they are more likely to adopt that action. The study found a significant positive association between the perceived benefits of practicing IPC measures and IPC compliance. HCS who perceived the use of personal protective equipment (PPE) and maintaming hand hygiene as more effective in preventing COVID-19 infection were more likely to adhere to IPC guidance.

Perceived barriers, which include factors that impede the adoption of a desired action, were addressed in the study. Participants who scored high on the perceived barriers scale demonstrated lower compliance with IPC guidance. At the beginning of the pandemic, there was a global shortage of necessary PPE, including in Saudi Arabia, which affected compliance. The unavailability of protective equipment, along with existing infrastructural inadequacies, overcrowded hospitals, and lack of IPC mechanisms, made hospitals particularly vulnerable to COVID-19. Furthermore, the perceived unreliability of common sources of information about COVID- 19, such as local and international news media and the government's health department, was significantly associated with lower compliance with IPC guidance. Adequate risk communication with HCS is crucial for effective crisis management during health emergencies, and trust in information sources plays a vital role in promoting compliance.

Trust in the administration, policymakers, and government in taking appropriate measures during the pandemic acted as a cue to action for adopting IPC practices among HCS. Participants who scored higher on this scale were more adherent to IPC measures. The level of support from the hospital administration also influenced compliance with IPC guidance, consistent with previous findings.

While perceived risk is considered a significant factor in shaping health behavior according to health behavior theories, the study did not find a significant association between perceived risk and IPC practice among HCS. Healthcare providers may be less motivated by risk perception to take protective measures due to their sense of duty in performing their jobs. This sense of responsibility, along with the inverse relationship between perceived barriers and compliance, explains the absence of an association between perceived risk and IPC compliance.

Conclusion

This study found that compliance with infection prevention and control (IPC) guidelines among healthcare staff (HCSs) in tertiary-level public hospitals in Bangladesh has improved but is still not satisfactory during the COVID- 19 pandemic. The study identified several factors that influence HCSs' compliance with IPC guidelines. The strongest predictor of compliance was HCSs' self-efficacy, or their belief in their ability to perform preventive behaviors. The study also found that unreliable information sources and a lack of personal protective equipment (PPE) decreased compliance, while trust in administration and government increased compliance. Additionally, factors such as increasing age, female sex, being a nurse, having non-communicable diseases (NCDs), and having exposure to confirmed COVID-19 patients were associated with better compliance. These findings can guide future interventions aimed at improving HCSs' IPC behavior.

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