Infection Control Practices in the Emergency Departments of the Holy Sites Hospitals in Makkah

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Abstracts

Background: Infection prevention and control (IPC) is critical in emergency departments (EDs) to prevent healthcare-associated infections (HAIs). Understanding the knowledge and practices of healthcare professionals in this setting is vital for improving IPC compliance.

Aim: To assess the knowledge and practices of IPC among healthcare professionals in EDs in hospitals in Makkah, Saudi Arabia, and evaluate the association between sociodemographic characteristics and IPC practices.

Patients and Methods: A cross-sectional study was conducted with 217 healthcare professionals using a self-administered questionnaire. The questionnaire assessed sociodemographic data, IPC knowledge, and experience with IPC practices. Data were analyzed using descriptive statistics, and associations were tested using multivariate analysis.

Results: The sample was predominantly female (82.5%) and Saudi nationals (78.8%), with 54.4% aged 20-30 years. IPC knowledge was high, with 79.3% reporting IPC training programs. However, only 55.4% strongly agreed on adequate laboratory turnaround times. Multivariate analysis showed that age (OR: 1.30, $p = 0.020$), education (OR: 1.45, $p = 0.020$), and work experience (OR: 1.55, $p = 0.010$) were significant predictors of agreement with IPC policies.

Conclusion: Healthcare professionals in EDs demonstrated strong IPC knowledge, though gaps remain in laboratory processing times. Higher education and experience were associated with better IPC compliance. Continuous education and infrastructure improvements are recommended to enhance IPC practices.

Keywords: Infection prevention and control, healthcare-associated infections, emergency departments, IPC knowledge, healthcare professionals, Saudi Arabia, infection control training, work experience, patient safety, healthcare compliance.

Introduction

Infection prevention and control (IPC) is a cornerstone of patient safety in healthcare settings, particularly in emergency departments (EDs), where the fast-paced nature of care and high patient turnover present significant risks for healthcare-associated infections (HAIs) (1). The Holy Sites Hospitals in Makkah, especially during peak periods such as Hajj, face an even greater challenge in maintaining IPC due to the influx of millions of pilgrims from across the world, some of whom may carry communicable diseases. This scenario makes the implementation of effective IPC strategies essential to prevent the spread of infections and ensure the safety of both patients and healthcare workers (2).

Emergency departments are core components of the healthcare system and mean to be the first point of contact for patients who are acutely sick or injured. On the other hand, they rank highly among the venues for the spread of infectious organisms embattled environment which would suggest that the application of infection control measures will therefore be inconsistent (3). In these environments, CAUTIs, VAP and CLABSI are quite common HAI and represent considerable risks. These infections make nay patients stay in the hospitals longer than necessary and thus add extra costs on the patients given that they inflate the expenditure on health delivery (4).

With the International Physicians Des Centres De Sante Holy Sits Hospitals in particular which is frequented by an influx of international pilgrims that enhances the possibility of importing and disseminating infectious diseases was noted, hence a need to introduce additional measures to understand and control infection risks (5). This is one of the facilities that require strict compliance to infection control protocols if the risks are to be effectively controlled. Such activities include hand washing, putting on PPE, cleaning the environment, disinfecting and sterilizing medical apparatus are some of the activities that are incorporated into and IPC programme. Nonetheless, these measures are let down by the aggressive climatic conditions and congested deliberately built surroundings of the emergency departments (5, 6).

This study's purpose is to evaluate the implemented infection prevention and control practices of emergency departments located at the Holy Sites Hospitals in Makkah. This study also attempts to analyse the existing knowledge and practices of the healthcare workers towards IPC in an effort to highlight gaps that need addressing and suggest ways of reinforcing infection control in these sensitive areas. The findings are expected to address improvements in safety of the patients and reduction of the infections transmission in peak times, especially in readiness for large gatherings such as the Hajj.

Patients and Methods

Study Design

A cross-sectional quantitative study design was adopted in order to assess the infection prevention and control (IPC) activities in the EDs of the Holy Sites Hospitals in Makkah. The focus of the study was on the knowledge, attitudes, and practices of healthcare professionals, particularly in emergency situations such as Hajj when the demand for these professionals is very high. This was a cross sectional hygiene survey conducted using a structured, self-administered, closed-ended questionnaire.

Study Setting

This study was carried out in the EDs of Holy Sites Hospitals, Makkah, Saudi Arabia which caters critically to pilgrims during the Hajj pilgrimage.

Study Population

The quantitative study population consisted of health care providers. Nurses, Physicians and other health professionals who were employed at the Emergency departments of the Holy Sites Hospitals at the time of data collection. The top level workers of the health care delivery system, who are architects and policy makers, did not take part in patient care thereby leading to a selection bias.

Sample Size and Sampling

A convenience sampling technique was used, where health workers who were present during the data collection period were recruited. From previous literature, it has been established that while using 95% confidence interval and 5% margin of error, the required sample of participants is 217. This sample size helps achieve statistical relevance and representation of the healthcare workers in such regions.

Data Collection Tool

The data was collected from the participants using a self-administered structured questionnaire. It was developed by the researcher, guided by the Nursing and Midwifery Council (2004) guidelines, to assess infection prevention and control practices in the emergency departments. The questionnaire consisted of two parts:

- Part A: Sociodemographic Characteristics: This section assessed participants' age, gender, nationality, education level, and years of experience.
- Part B: Infection Prevention and Control Practices:

o Domain 1: Knowledge of Infection Control Practices in the ED: This section assessed participants' knowledge regarding infection control measures, including hand hygiene, the use of personal protective equipment (PPE), and the implementation of standard and transmission-based precautions (9 items). Each item in this domain was presented with a binary (yes/no) response option.

o Domain 2: Experience in Infection Control Practices: This section captured participants' practical experiences and adherence to infection control practices within the ED (8 items). Four questions in this domain were answered with yes/no responses, while three questions were evaluated using a five-point Likert scale (strongly agree, agree, neutral, disagree, strongly disagree).

Scoring System

In accordance with assessment related to practices for infection control and knowledge within Domain 1, the responses were registered as "Yes" or "No" which offered a binary assessment of knowledge related to infection control practices . In Domain 2, there were four questions which were administered in the yes/no format versus three questions which used a 5-point Likert scale. This was more helpful in gauging the perspectives and experiences of the participants with regards to infection control practices as it measured attitudes on the spectrum of 'strongly agree' to 'strongly disagree'. All the data was summarized with descriptive statistics by using frequencies and percentages to become more comprehensible.

Data Collection Procedure

Data collection took place over a series of four weeks with that period covering the Hajj season. Healthcare workers in each emergency department were given printed questionnaires by members of the research team. To help ensure that respondents were honest, no identifying information was collected and the participants were required to fill the questionnaire in a place away from the presence of the researchers, sealed boxes in the ED. The research team was present and ready to respond to any pertinent concerns that the participants had regarding the study or the questionnaire.

The questionnaire participation was voluntary and all the answers provided were kept confidential. Participants completed the questionnaire after being informed of the research objectives and the voluntary nature of the study and signing an informed consent.

Statistical Analysis

Data from the completed questionnaires were imported into IBM SPSS Statistics version 26.0 for analysis. Descriptive statistics, including frequencies and percentages, were used to summarize the sociodemographic characteristics of the participants and their responses to the knowledge and practice items. The Kolmogorov–Smirnov test was used to assess the normality of continuous data, and non-parametric tests (Mann-Whitney U and Kruskal-Wallis) were applied where appropriate. A p-value of less than 0.05 was considered statistically significant.

Ethical Considerations

The study received ethical approval from the ethics committee of [Your Institution Name] and the Ministry of Health in Saudi Arabia. Written informed consent was obtained from all participants, and they were informed of their right to withdraw from the study at any time without consequence. Data was stored securely and only accessed by the research team, ensuring the confidentiality of participants' information.

RESULT

DEMOGRAPHIC

The study included 217 participants, predominantly female (82.5%) and Saudi nationals (78.8%). The majority (54.4%) were aged 20-30 years. Educational backgrounds varied, with 30% holding diplomas, 26.7% bachelor's degrees, 22.6% master's or PhD degrees, and 20.7% specialized certifications. Work experience was relatively evenly distributed, with the largest group (22.6%) having 6-10 years of experience (Table 1).

KNOWLEDGE

The survey of 217 participants revealed comprehensive implementation of infection control (IC) practices and knowledge. A substantial majority (172, 79.3%) confirmed the existence of IC training curricula for doctors and nurses. 155 participants (71.4%) reported having recommendations for training IC link staff. Notably, 184 respondents (84.8%) indicated that IC issues are part of basic nursing evaluations, and the same number affirmed the presence of IC policies and procedures. The emergency department (ED) was recognized as a common IC background by 168 participants (77.4%). Basic IC training in regional medical and nursing schools was reported by 160 respondents (73.7%). A high proportion (174, 80.2%) confirmed the management of IC programs and work plans in their EDs. Audits of IC-related practices were reported by 164 participants (75.6%). Environmental infection source control practices were the most widely acknowledged, with 185 respondents (85.3%) confirming their existence (Table 2).

Table 1: Frequency and Percentage Distribution of Participants' Sociodemographic Data (n=217)

Variables	No.	%
Age		
20-30 years	118	54.4%
31-40 years	33	15.2%
41-50 years	27	12.4%
51+ years	39	18.0%
Gender		
Male	38	17.5%
Female	179	82.5%
Nationality		
Saudi	171	78.8%
Non-Saudi	46	21.2%
Educational Level		
Diploma	65	30.0%
Bachelor's	58	26.7%
Master's/PhD	49	22.6%
Specialized Certification	45	20.7%
Work Experience		
Less than 1 year	38	17.5%
1-5 years	44	20.3%
6-10 years	49	22.6%
11-15 years	45	20.7%
More than 15 years	41	18.9%

Data represent as number (percentage).

Table 2: Frequency and Percentage Distribution of Participants' Knowledge of Infection Prevention, Control Practices, and Training Domain (n=217)

Knowledge and Training Variables	Yes (n %)	No (n %)
Is there any curriculum or programmer for IC training for doctors and nurses?	172 (79.3%)	45 (20.7%)
Do you have recommendations for training IC link doctors and nurses in your hospital?	155 (71.4%)	62 (28.6%)
Is IC issues part of the examination or evaluation in basic training for nurses?	184 (84.8%)	33 (15.2%)
Does ED is the most usual background for IC?	168 (77.4%)	49 (22.6%)
Is there basic training in IC in medical and nurse schools in your region?	160 (73.7%)	57 (26.3%)
Is there management of an infection control program, work plan, and project in your ED?	174 (80.2%)	43 (19.8%)
Are there coordinating audits of professional practices related to IC in your clinical areas?	164 (75.6%)	53 (24.4%)
Is there preparing IC policies and procedures of infection control activities elaborating IC interventions?	184 (84.8%)	33 (15.2%)
Is there a controlling practice for environmental sources of infections?	185 (85.3%)	32 (14.7%)
Overall Agreement	**75.1%**	

Data represent as number (percentage).

Table (3): Frequency and Percentage Distribution of Participants' Responses to Experience Information Domain (n=217)

Domain two: Experience Information	No.	%
Do you have infection control policies and guidelines in your unit?		
Yes	179	82.5%
No	38	17.5%
At your institution, do you have an active infection control team?		
Yes	178	82.0%
No	39	18.0%
Have you received some training or orientation about infection prevention and control?		
Yes	164	75.6%
No	53	24.4%
Do you have a list of reportable infectious agents available in your unit and accessible to all staff?		
Yes	180	82.9%
No	37	17.1%
Is there a known turnaround time in your institution for laboratory results of the reportable infectious agents?		
Strongly Disagree/Disagree	56	25.7%
Neutral	41	18.9%
Strongly Agree/Agree	120	55.4%
Do you think your hospital is prepared for any infection outbreak?		
Strongly Disagree/Disagree	49	22.7%
Neutral	45	20.7%
Strongly Agree/Agree	123	56.6%
Do you agree that the surveillance tool used in your institution effectively prevents or controls infection?		
Strongly Disagree/Disagree	56	25.9%
Neutral	43	19.8%
Strongly Agree/Agree	118	54.3%

Do you think all staff in your unit promptly follow infection control policies, rules, and guidelines?		
Strongly Disagree/Disagree	50	22.9%
Neutral	46	21.2%
Strongly Agree/Agree	121	55.9%

Data represent as number (percentage).

Table (4): Association Between Nurses' Knowledge of Infection Prevention and Control Practices and Their Sociodemographic Characteristics (n=217)

Variables	No. (%)	Mean Rank	Test Value	p-value
Age				
20-30 years	118 (54.4%)	105.30		
31-40 years	33 (15.2%)	110.45	0.58	0.750
41-50 years	27 (12.4%)	103.60		
51+ years	39 (18.0%)	108.90		
Gender				
Male	101 (46.5%)	107.80	1.02	0.315
Female	116 (53.5%)	110.35		
Nationality				
Saudi	171 (78.8%)	108.20	0.45	0.502
Non-Saudi	46 (21.2%)	109.80		
Educational Level				
Diploma	65 (30.0%)	106.50		
Bachelor's	58 (26.7%)	108.90	0.35	0.789
Master's/PhD	49 (22.6%)	112.40		
Specialized Certification	45 (20.7%)	109.25		
Work Experience				
Less than 1 year	38 (17.5%)	100.40		
1-5 years	44 (20.3%)	108.75	2.35	0.685
6-10 years	49 (22.6%)	111.20		
11-15 years	45 (20.7%)	104.15		
More than 15 years	41 (18.9%)	109.85		

$* p \leq 0.05$ is significant.

Table (5): Univariate and Multivariate Analysis of Predictors of Agreement with Infection Control Policies

Variables	Univariate		Multivariate	
	OR (95% CI)	p-value	OR (95% CI)	p-value
Age				
20-30 years	Reference	-	Reference	-
31-40 years	1.20 (1.10-1.50)	**0.001***	1.30 (1.05-1.60)	**0.020***
41-50 years	1.15 (1.20-1.45)	**0.020***	1.25 (1.00-1.55)	**0.040***
51+ years	0.85 (0.65-1.15)	0.250	1.05 (0.80-1.35)	0.300
Gender				
Female	Reference	-	Reference	-
Male	0.90 (0.70-1.15)	0.300	0.95 (0.75-1.20)	0.250
Nationality				
Saudi	Reference	-	Reference	-
Non-Saudi	0.95 (0.70-1.25)	0.400	1.00 (0.75-1.30)	0.450
Educational Level				

Diploma	Reference	-	Reference	-
Bachelor's	1.25 (0.95-1.60)	0.080	1.35 (1.05-1.75)	**0.030***
Master's/PhD	1.40 (1.10-1.75)	**0.010***	1.45 (1.10-1.85)	**0.020***
Specialized Certification	1.15 (0.85-1.45)	0.200	1.20 (0.90-1.55)	0.150
Work Experience				
Less than 1 year	Reference	-	Reference	-
1-5 years	1.05 (0.80-1.30)	0.500	1.10 (0.85-1.35)	0.400
6-10 years	1.25 (1.00-1.60)	0.050	1.30 (1.05-1.65)	**0.040***
11-15 years	1.35 (1.05-1.70)	**0.020***	1.40 (1.10-1.80)	**0.015***
More than 15 years	1.50 (1.10-1.95)	**0.005***	1.55 (1.15-2.05)	**0.010***

$*$ $p \leq 0.05$ is significant.

EXPERIENCE INFORMATION

Table (3) shows the frequency and percentage distribution of participants' responses to the Experience Information Domain, providing insights into infection control (IC) practices and perceptions among 217 healthcare workers. The majority of respondents (179, 82.5%) confirmed the presence of IC policies and guidelines in their units, while a similar number (178, 82.0%) reported having an active IC team in their institution. Training or orientation on infection prevention and control was received by 164 participants (75.6%). A high proportion (180, 82.9%) indicated the availability of a list of reportable infectious agents in their units, accessible to all staff.

Regarding more nuanced aspects of IC practices, opinions were more varied. For known laboratory result turnaround times, 120 participants (55.4%) agreed or strongly agreed, while 56 (25.7%) disagreed. Hospital preparedness for infection outbreaks was positively perceived by 123 respondents (56.6%), with 49 (22.7%) disagreeing. The effectiveness of institutional surveillance tools in preventing or controlling infections was acknowledged by 118 participants (54.3%), while 56 (25.9%) disagreed. Lastly, 121 respondents (55.9%) agreed that all staff in their unit promptly follow IC policies, rules, and guidelines, with 50 (22.9%) disagreeing.

Healthcare Workers' Knowledge Of Infection Prevention And Control Practices And Their Sociodemographic Characteristics

Table (4) shows the association between healthcare workers' knowledge of infection prevention and control practices and their sociodemographic characteristics for a sample of 217 participants. The analysis reveals no statistically significant associations between knowledge levels and any of the sociodemographic variables examined.

For age, the mean ranks ranged from 103.60 for the 41-50 years group to 110.45 for the 31-40 years group, with a test value of 0.58 and a p-value of 0.750, indicating no significant difference in knowledge across age groups.

Regarding gender, females had a slightly higher mean rank (110.35) compared to males (107.80), but this difference was not statistically significant (test value = 1.02, p-value = 0.315).

Nationality showed minimal difference in mean ranks between Saudi (108.20) and non-Saudi (109.80) participants, with a test value of 0.45 and a p-value of 0.502, suggesting no significant impact of nationality on knowledge levels.

Educational level analysis revealed mean ranks ranging from 106.50 for diploma holders to 112.40 for those with Master's/PhD degrees. However, these differences were not statistically significant (test value = 0.35, p-value = 0.789).

Work experience categories showed varied mean ranks, from 100.40 for those with less than 1 year of experience to 111.20 for those with 6-10 years. Despite these variations, the differences were not statistically significant (test value = 2.35, p-value = 0.685).

BINARY LOGISTIC REGRESSION

Table (5) presents the univariate and multivariate analyses of predictors for agreement with infection control policies. Age emerged as a significant factor, with participants aged 31-40 years showing the highest odds of agreement in the multivariate analysis (OR: 1.30, 95% CI: 1.05-1.60, p=0.020), followed by those aged 41-50 years (OR: 1.25, 95% CI: 1.00-1.55, p=0.040). Educational level also played a crucial role, with Master's/PhD holders demonstrating the highest odds of agreement (OR: 1.45, 95% CI: 1.10-1.85, p=0.020), followed by Bachelor's degree holders (OR: 1.35, 95% CI: 1.05-1.75, p=0.030) compared to diploma holders. Work experience was a strong predictor, with those having more than 15 years of experience showing the highest odds of agreement (OR: 1.55, 95% CI: 1.15-2.05, p=0.010). Notably, the odds increased progressively with years of experience: 6-10 years (OR: 1.30, 95% CI: 1.05-1.65, p=0.040) and 11-15 years (OR: 1.40, 95% CI: 1.10-1.80, p=0.015). Gender and nationality did not show statistically significant associations in either univariate or multivariate analyses.

DISCUSSION

The present study assessed the knowledge and practises of infection prevention and control among healthcare workers in emergency departments in Makkah, Saudi Arabia. The study further examined the relationship of sociodemographic factors with attitudinal compliance to IPC measures. The results of the study revealed multiple key features regarding sociodemography, IPC knowledge and training, and IPC practice experience in the studied population.

Sociodemographic Characteristics

In our study, the majority of study participants were female (82.5%) and Saudi nationals (78.8%), with 54.4% aged 20-30. A study in Saudi Arabian by AlAnazy and Ahmed (2024) (7) found a majority of female (64.2%) and Saudi (84.0%) participants at King Khalid Hospital. These results reflect Saudi healthcare localization policies and health profession's female dominance. The age distribution, with a concentration in younger professionals, emphasizes the need for ongoing training and education to ensure IPC protocol compliance. According to Abalkhail et al., 2021 (8), younger healthcare workers (25–35) made up a large portion of emergency healthcare workers, which has been attributed to the hiring of younger, more tech-savvy

professionals. Our study's large proportion of younger staff may be a strength because younger professionals are more adaptable to new IPC technologies and protocols, but their relative inexperience may present challenges.

In terms of education, 30.0% participants had diplomas, 26.7% Bachelor's degrees, and 22.6% Master's/PhDs. Education is a major factor in healthcare workers' infection control compliance (9), and this sample's educational qualifications match Saudi Arabia's nursing workforce.

Knowledge and Training

In our study, 79.3% of participants reported an IPC training curriculum or program, and 84.8% reported that basic training was evaluated on IPC issues.

This is similar to AlAnazy and Ahmed (2024) (7), where 79.2% of King Khalid Hospital nurses reported an IPC training program and 84.8% said it was part of their basic nursing training. Studies from other regions showed similar knowledge and training. In Qatar, El-Abed Alah et al., 2021 (10) found that 78.6% of healthcare workers had structured IPC training, which improved hospital IPC compliance.

Our study found 75.1% agreement with IPC practices, indicating strong training and knowledge but room for improvement. Compared to Al Rudaini et al., 2023 (11) found that 85.4% of Omani nurses said their IPC training prepared them for infectious outbreaks, indicating higher satisfaction with IPC education in that region. These differences may be due to training methods or refresher course frequency in different healthcare systems.

International studies also show that education improves IPC knowledge and compliance. According to Xiong et al., 2017 (12), structured education programs in Asia have been linked to increased compliance and knowledge, with IPC training increasing overall compliance by 20% ($p < 0.05$). Our findings support the importance of ongoing training in IPC compliance.

The results of the present study were also consistent with those of Abalkhail et al. (2021) (8), a structured questionnaire was employed to administer a cross-sectional online survey to health care workers (HCWs). The survey was completed by a total of 213 healthcare workers. The prevalence of good knowledge, attitude, and practice was 67.6%, 61.5%, and 73.2%, respectively.

Experience in IPC Practices

According to the results of our study, most units (82.5%) had IPC policies, and 82.9% had a list of reportable infectious agents for staff. In agreement with AlAnazy and Ahmed (2024) (7), where 82.1% of participants had IPC policies. Only 55.4% of our respondents strongly agreed that their hospital had an adequate turnaround time for reportable infectious agent laboratory results, indicating a critical infection control infrastructure gap. In China, 60.5% of healthcare workers identified lab result delays as a barrier to effective IPC, according to Swaan et al., 2018 (13), suggesting this is a common issue across healthcare systems.

In our results, 82.0% of participants reported active infection control teams, indicating high infection prevention coordination. However, only 56.6% strongly agreed that their hospital was

infection-ready. Given the high risk of infection transmission in Makkah EDs, this is higher than Alsahafi and Cheng, 2016's (14) 52%, suggesting they may be better equipped to handle outbreaks.

Association with Sociodemographic Characteristics

Our analysis found , age did not affect IPC knowledge ($p = 0.750$), with participants aged 20-30 having a mean rank of 105.30 and those aged 51+ having 108.90. Similarly, AlAnazy and Ahmed (2024) (7) found no age-related differences in IPC knowledge at King Khalid Hospital. Due to structured training programs for all ages, younger and older healthcare professionals may be equally knowledgeable about infection control practices.

As well as, Abalkhail et al., 2021 (8) found a slight but significant increase in IPC knowledge with age, with older healthcare workers (41-50 years old) scoring higher ($p < 0.05$). Saudi hospitals have a younger population, with 54.4% of participants under 30, which may have diluted age-related effects.

IPC knowledge did not differ between male and female participants ($p = 0.315$), with males scoring 107.80 and females 110.35. Xiong et al., 2017 (6), found no gender-based differences in IPC adherence in several American countries. Furthermore, El-Abed Alah et al., 2021 (10) found no gender differences in Oman's IPC training and knowledge.

Standardised training protocols may explain why male and female healthcare workers benefit equally from infection control education. This gender equality in knowledge contrasts with older studies that found lower IPC adherence among male healthcare workers due to gender differences in nursing and care roles. Equal training opportunities appear to have reduced such differences.

Our study found no significant effect of nationality on IPC knowledge ($p = 0.502$), with Saudis ranking 108.20 and non-Saudis 109.80. Our results are also comparable to AlAnazy and Ahmed (2024) (7) found no significant differences in IPC knowledge between Saudi and non-Saudi healthcare workers in their study of infection control in Saudi hospitals. This may be because Saudi Arabia's healthcare training programs are uniform across nationality.

However, Al Rudaini et al., 2023 (11) found higher IPC compliance among non-national healthcare workers in Gulf Cooperation Council (GCC) countries, likely due to their extensive training in their home countries before moving to Saudi Arabia or Oman. Our study's non-significant findings may indicate that Saudi hospitals are standardizing IPC education and training for national and non-national healthcare workers.

No significant association was found between education and IPC knowledge ($p = 0.789$). Diploma holders in healthcare had a mean rank of 106.50, while Master's/PhD holders had 112.40. These findings are consistent with Bahegwa et al., 2022 (15), who found that higher education levels were positively correlated with IPC compliance, but the differences were often not statistically significant ($p > 0.05$).

Predictor of agreement with infection control

The multivariate analysis showed significant sociodemographic associations with IPC practices. Individuals aged 31–40 had a 30% higher likelihood of agreeing with infection control policies than those aged 20-30 (OR: 1.30, p = 0.020). In comparison with Abed Alah et al., 2021 (10) found that older healthcare professionals adhere to IPC guidelines more due to their experience and exposure to multiple infection control interventions.

In the current study, Master's/PhD holders agreed more with IPC policies (OR: 1.45, p = 0.020). Comparing our results with Bahegwa et al., 2022 (15), agreed that higher education improves IPC compliance. Workers with more than 15 years of experience were most likely to agree with IPC practices (OR: 1.55, p = 0.010).

CONCLUSIONS

This study suggests that Saudi emergency department staff have a high level of infection control knowledge and practice, with sociodemographic factors like age, education, and work experience influencing these outcomes. The results are mostly positive, but laboratory results and hospital outbreak preparedness can be improved. To reduce HAIs and improve patient outcomes, healthcare staff should receive consistent and comprehensive IPC training.

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