Incidence of hospital-acquired infections among healthcare workers in Egypt before and during the COVID-19 pandemic

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Abstract

Background: Hospital-acquired infection is higher among healthcare workers (HCWs) than among other occupational groups, and the COVID-19 pandemic exacerbated its incidence.

Aim: To assess the incidence of hospital-acquired infections among HCWs in, Cairo, Egypt, during the COVID-19 pandemic.

Methods: This retrospective cohort study collected and evaluated data on hospital-acquired infections (excluding COVID-19) from 1660 nurses, physicians, technicians, and housekeepers in 6 hospitals in Cairo Governorate, Egypt, 1 year before and 1 year during the COVID-19 pandemic. The data were analysed using SPSS version 21.0 and descriptive and inferential statistics were used to test the magnitude and direction of relationships between the variables.

Results: The rate of hospital-acquired infections was 3.1% before and 1.3% during the COVID-19 pandemic. There was a significantly lower risk of hospital-acquired infection among the HCWs during the pandemic than before it. Incidence was highest among housekeepers (10.6%), and physicians had the highest relative risk (4.33). Before the pandemic, pneumonia was the most common hospital-acquired infection (20.8%) among HCWs, while hepatitis C was the most common (8.3%) during the pandemic. The most significant predictors of hospital-acquired infection were COVID-19 (before and during the pandemic), working area and profession.

Conclusion: There was a significant reduction in hospital-acquired infections among HCWs during the COVID-19 pandemic, attributed to increased adherence to infection prevention and control measures. Housekeepers, nurses and emergency department workers were at higher risk, indicating the need for further investigations among these groups of HCWs to understand the contributing factors and design targeted interventions to lower the risks and incidence.

Introduction

Hospital-acquired infections occur during work or residence within healthcare settings and pose a risk to patients and healthcare workers (HCWs) (1). Hospital-acquired infections among patients have been extensively studied; however, few studies have examined the prevalence, incidence or types of hospital-acquired infections among HCWs, particularly in developing countries such as Egypt (2). HCWs have one of the highest rates of occupational hospital-acquired infections (3). Hospital-acquired infections undermine initiatives aimed at staff development, such as continuing clinical and in-service education, and consequently affect the quality of care (4). The COVID-19 pandemic posed additional challenges to healthcare systems globally, including increased risks of infection for HCWs (5). However, there is limited research on the precise impact of the pandemic on the incidence of hospital-acquired infections among HCWs (6,7).

According to the Kaiser Family Foundation, healthcare is the largest and fastest-growing sector of the global economy, employing millions of workers annually. The number of HCWs in Egypt exceeds the regional average for the Eastern Mediterranean Region (8), comprising physicians (20%), dentists (6%), pharmacists (2%), nurses (67%) and technicians (5%) (9).

HCWs face a significant risk of infection due to the diverse range of tasks they perform and the possibility of having contact with contamination (10). Hospital-acquired infections can occur when individuals are exposed to bloodborne pathogens, such as Ebola virus, hepatitis B and C viruses and HIV, which can enter the body through needlestick injuries, skin wounds or contact with infected mucous membranes (11–13). Some infections can occur through the faecal-oral pathway, which involves the ingestion of contaminated material containing pathogens such as *Salmonella* spp. and hepatitis A virus (14). Infections can also occur from the inhalation of airborne pathogens, such as those causing tuberculosis, chickenpox, measles, influenza, pertussis and pneumonia, as well as human coronaviruses (15).

By 20 April 2020, SARS-CoV-2 had caused > 2.4 million cases of COVID-19 and 165 000 fatalities (16), and 10–20% of cases worldwide were among HCWs (17). However, there are limited data on the incidence of COVID-19 among HCWs in Egypt. Abd El Ghaffar et al. found 2176 medical personnel in Egypt who presented with COVID-19 triage symptoms from 1 June to 15 July 2020 (18), and the Egyptian Medical Syndicate announced in September 2021 that 600 Egyptian physicians had died from COVID-19 (19).

Infection prevention and control measures include hand hygiene, safe waste management and use of personal protective equipment (20). High compliance with infection prevention and control measures was observed during the COVID-19 pandemic (21). The perception of high-risk and fear of contracting an infection among HCWs could account for the 96.3% increase in adherence to infection prevention and control measures during the pandemic (22), which may also have decreased the incidence of hospital-acquired infections.

Few studies have assessed the incidence of hospital-acquired infections before and during the COVID-19 pandemic among HCWs in Egypt. Therefore, this study aimed to assess the influence of COVID-19 on the incidence of hospital-acquired infections among HCWs in Egypt. Three specific questions were addressed: (1) What was the incidence of hospital-acquired infections among HCWs before and during the COVID-19 pandemic? (2) Did the incidence of hospital-acquired infections change during compared with before the pandemic? (3) Which factors influenced the incidence of hospital-acquired infections among HCWs? It is hoped that the results will help in formulating effective corrective strategies that ensure a secure and efficient work environment, maintain the workforce and guide policy formulation.

Methods

Research design

This was a retrospective cohort study that followed the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines (23).

Ethics considerations

This study was approved by the Research Ethics Committee, Ministry of Health, Egypt (IRB approval # 32-2020/18). Participation in the study was voluntary. Participants were informed of the purpose, methodology, benefits and risks of the study, and they had the right to withdraw at any time. The rights of the participants were protected by adhering to local Egyptian law, and all procedures were conducted in accordance with the Declaration of Helsinki. Prior to study onset, verbal informed consent was obtained from the participants. The coding of all data ensured their anonymity and confidentiality. The data were exclusively used for this study.

Definitions

According to the Pakistan National AIDS Programme guidelines, loss to follow-up is defined as an individual who has not presented to care for 6 months since their last scheduled appointment or drug pick-up date. We defined re-engagement into care to include individuals who were previously lost to follow-up and have reported back to the ART centre and re-initiated treatment, and silent transfer to include individuals on treatment who have registered and continued treatment in another facility.

Operational definitions

Hospital-acquired infection among HCWs was defined as infections acquired while caring for a patient or dealing with patient discharge or specimens, except for COVID-19. We considered the timing of symptom onset in relation to exposure, or the presence of specific risk factors associated with healthcare settings to determine whether the infections were acquired in the community or at a healthcare facility. We used laboratory tests, radiographic examinations and/or clinical signs to validate the reported infections, depending on the type of infection and in agreement with the definition of the US Centers for Disease Control and Prevention (24).

Dependent variable

Incidence of hospital-acquired infection among HCWs was the study variable measured using the Occupational Hospital Acquired Infections Assessment Questionnaire (OHAIAQ). The questionnaire consists of 2 parts. The first includes questions on the sociodemographic characteristics of the participants, such as age, gender, year of employment, workplace and professional category. The second section inquired whether hospital-acquired infection occurred during the survey period. If the response was affirmative and infection was confirmed, the type of hospital-acquired infection, expected mode of transmission and frequency of occurrence were requested. To ensure the accuracy of reported hospital-acquired infections, the data collected through the questionnaire were cross verified with existing infection control surveillance records. The incidence rate was calculated as: number of new hospital-acquired infection /number of participating HCWs × 100.

Reliability and validity

Content and face validity for the developed tools were tested using the Lawshe method (25). Five experts in nursing and medicine revised the tools. The content validity index for OHAIAQ was 0.83 after calculating the content validity ratio of each item. The internal reliability was determined to be 0.72 using Cronbach's α. The tool was piloted piloted before the study 122 subjects to ensure its clarity, objectivity, relevance and feasibility.

Subjects and setting

This study was conducted in 6 selected hospitals in Cairo Governorate, Egypt: Helwan General Hospital, Helwan Fever Hospital, Fever Hospital El Abbaseya, El Mounira

General Hospital, Abbaseya Chest Hospital, and Internal Medicine Hospital. On 14 February 2020, these hospitals started attending to only COVID-19 patients. The total capacity of the selected hospitals was ~1200 beds. The participants included doctors, nurses, technicians and housekeepers who were required to: have been employed in their current position within the past year; have received all necessary vaccinations; have not worked in any other healthcare facilities during the period; be under the age of 50 years; and be free from immunosuppressive or chronic diseases. There were 2102 HCWs in the selected hospitals but only 1660 met the inclusion criteria and agreed to participate in the study.

Sample size calculation

The sample size 1289 was estimated using G power software version 3.1.9.4 with α = 0.05, power (1–β error probability) = 0.95 and high effect size = 0.1. Twenty percent of the sample was added to account for any dropouts. A sample size of 1547 was deemed adequate based on the previous study.

Data collection

After receiving administrative approval in February 2021, the study began by interviewing HCWs who met the inclusion criteria and administering the OHAIAQ. The OHAIAQ was not self-administered. The participants were asked retrospectively about any hospital-acquired infection they had experienced between February 2019 and February 2021. Hospital-acquired infections reported between 1 February 2019 and 30 January 2020 were considered to be acquired before the COVID-19 pandemic.

Hospital-acquired infection reported between 1 February 2020 and 30 January 2021 were categorized as acquired during the COVID-19 pandemic. In this way, we were able to precisely document hospital-acquired infection and effectively minimize any potential bias. The collected data were encoded and entered into a spreadsheet to for analysis.

Data analysis

SPSS version 21.0 was used for analysis after the data were coded and entered into a computerized database. Descriptive and inferential statistics were used to test the magnitude and direction of the relationships between the studied variables. The significance level for all statistical tests was set at 0.05. All frequency and percentage distributions of the variables were included in the descriptive statistics. McNemar's test was used to measure the inferential statistics and determine whether there was a significant variance between the observed frequencies. Relative risk (RR) and RR reduction with a 95% confidence interval (CI) were used. Binary logistic regression modelling was performed to identify significant predictors after adjusting for potential confounders. The strength of the association was evaluated by calculating the odds ratio (OR) and its 95% CI.

Results

Only 1660 of the 2102 HCWs checked for eligibility were included in the study (Figure 1): 49.8% of the participants were nurses and 55% were female, with a mean age

Figure 1. **Flow chart of healthcare worker enrolment**
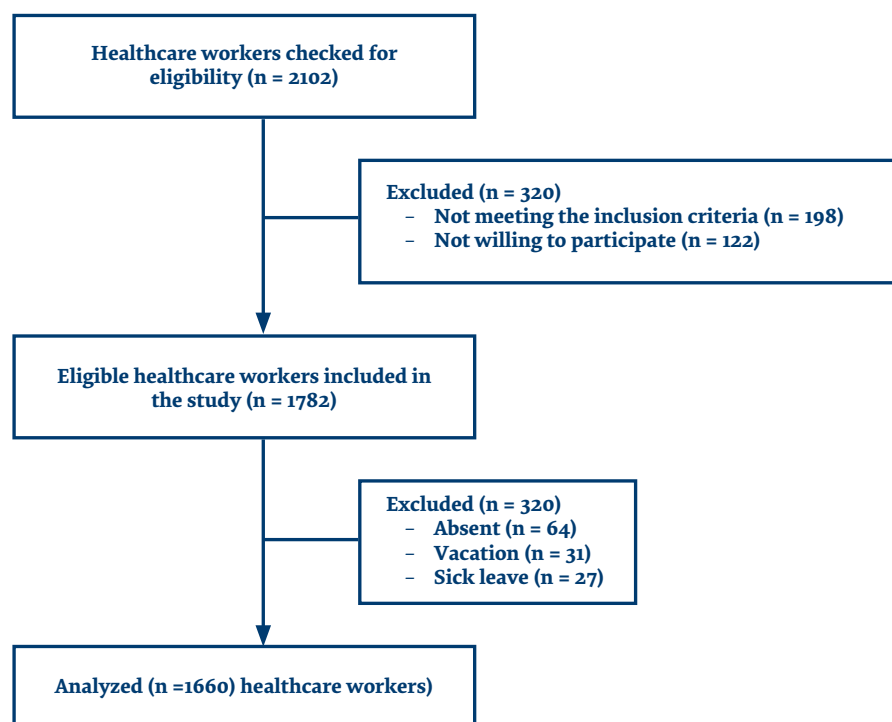
of 32.74 ± 11.0 years. The workplace with the highest proportion of participants (25.6%) was the surgical inpatient unit, and the mean duration of employment was 13.60 ± 10.65 years.

Seventy-two hospital-acquired infections were detected; 51 (70.83%) of them before the COVID-19 pandemic (Table 1). Pneumonia was the most frequently reported hospital-acquired infection, accounting for 27.7% of all infections, and 75% of cases of pneumonia occurred before the pandemic. The most prevalent type of hospital-acquired infection during the pandemic was hepatitis C (8.3%), which was also the second most frequently reported hospital-acquired infection overall (23.61%). Airborne transmission caused the highest incidence of hospital-acquired infection (52.7%); 40.27% before and 12.5% during the pandemic. The faecal-oral route was the least frequent mode of transmission, with a percentage of 4.1% before the pandemic. Direct skin contact was the only transmission mode contributing more to infection during (4.16%) than before (2.8%) the pandemic. McNemar's test revealed a significant difference in reported hospital-acquired infections before and during the pandemic for various modes of transmission. Specifically, significant differences were found for modes of transmission, including airborne (P = 0.021), bloodborne (P = 0.013) and faecal-oral (P < 0.001). The incidence of hospital-acquired infections 1 year before the COVID-19 pandemic was 3.07% (Table 2). In contrast, the incidence 1 year during the pandemic was 1.26%, giving an overall incidence

of 4.33%. There was a highly significant difference between the incidence of hospital-acquired infections before and during the pandemic (P < 0.001). The RR of hospital-acquired infections among HCWs before the pandemic was 2.43 times that of the same HCWs during the pandemic. That means the RR of hospital-acquired infections among HCWs during compared with before the pandemic was 0.41. Relative RR was = 1 – RR × 100, which corresponded to a 59% probability rate. Table 2 shows that 95% of this value would fall within the 95% CI (1.468–4.019) if the study were repeated 100 times with a similar sample.

The highest percentage of hospital-acquired infection incidence was among housekeepers and nurses, at 10.6% and 4.11%, respectively (Table 3). Conversely, the highest RR was among physicians at 4.33, whereas housekeepers demonstrated the lowest RR at 1.57.

The binary logistic regression analysis comprised 6 independent variables, with hospital-acquired infections as the dependent variable (Table 4). Three of these variables made a significant contribution (predictors) to hospital-acquired infection (P < 0.01): time before/during the COVID-19 pandemic (OR 2.55, 95% CI 1.55–4.15), workplace (OR 0.34, 95% CI 0.29–1.42) and professional category (OR 0.31, 95% CI 0.04–0.47). The highest frequency of hospital-acquired infection was found among HCWs in the emergency department (n = 8, 8.9%) (P < 0.001).

Table 1. Mode of transmission and types of reported acquired infections

Mode of transmission	Type	Before COVID-19 n (%)	During COVID-19 n (%)	Total n (%)	Test statistics	P
Airborne		29 (40.2)	9 (12.5)	38 (52.7)		
	Tuberculosis	4 (5.5)	0 (0)	4 (5.5)		
	Measles	0 (0)	0 (0)	0 (0)		
	Influenza	9 (12.5)	4 (5.5)	13 (18)	18.61[a]	0.021
	Chickenpox	1 (1.4)	0 (0)	1 (1.4)		
	Human coronaviruses (except SARS-CoV-2)	0 (0)	0 (0)	0 (0)		
	Pneumonia	15 (20.8)	5 (6.9)	20 (27.7)		
Bloodborne		17 (23.6)	9 (12.5)	26 (36.1)		
	HIV	0 (0)	0 (0)	0 (0)	27.34[a]	0.013
	Hepatitis C virus	11 (15.2)	6 (8.3)	17 (23.6)		
	Hepatitis B virus	6 (8.3)	3 (4.2)	9 (12.5)		
Faecal-oral		3 (4.1)	0 (0)	3 (4.1)		
	Hepatitis A virus	3 (4.1)	0 (0)	3 (4.1)	24.48[a]	< 0.001
	Salmonella	0 (0)	0 (0)	0 (0)		
Direct skin		2 (2.8)	3 (4.16)	5 (6.9)		
	Sarcoptes scabiei	0 (0)	2 (2.8)	2 (2.8)	3.34[a]	0.072
	Herpes simplex	2 (2.8)	1 (1.4)	3 (4.2)		
Total		*51 (70.8)*	*21 (29.2)*	*72 (100)*		

[a]*McNemar test*

Table 2. Incidence of acquired infections before and during COVID-19 pandemic

	Incidence n (%)	No. n (%)	RR	95% (CI)	df	Test statistics	P
Before pandemic	51 (3.1%)	1609 (96.9%)	2.43	(1.468–4.019)	1	11.68[a]	<0.001
During pandemic	21 (1.3%)	1639 (98.7%)					

[a]McNemar test test; CI = confidence interval; RR = relative risk.

Table 3. Frequency of acquired infections before and during COVID-19 pandemic by profession

Professional category	n (%)	Time	Acquired infections n (%)	No. n (%)	Incidence rate	RR	95% CI
Nurses	826 (49.80)	Before pandemic	24 (2.9)	802 (97.1)	4.11%	2.40	(1.15–4.98)
		During pandemic	10 (1.2)	816 (98.8)			
Physicians	544 (32.80)	Before pandemic	13 (2.4)	531 (97.6)	2.94%	4.33	(1.24–15.12)
		During pandemic	3 (0.6)	541 (99.4)			
Housekeepers	170 (10.20)	Before pandemic	11 (6.0)	159 (93.1)	10.600%	1.57	(0.62–3.95)
		During pandemic	7 (4.1)	163 (95.9)			
Technicians	120 (7.20)	Before pandemic	3 (2.5)	117 (97.5)	3.33%	3.0	(0.31–28.43)
		During pandemic	1 (0.8)	119 (99.2)			

CI = confidence interval; RR = relative risk

Table 4. Binary logistic regression for predictors of acquired infections

	n (%)	β	SE	P	OR	95% CI	Nagelkerke R2
Age, yr							
Mean ± SD	32.74 ± 11.0	0.0	0.07	0.934	0.09	1.16–3.38	
Years of experience							
Mean ± SD	13.60 ± 10.65	0.02	0.07	0.720	1.02	1.09–2.32	
Gender							
Male	748 (45.0)	0.48	0.26	0.064	1.59	1.15–2.72	
Professions					<0.001	0.31	0.04–0.47	
Nurses	826 (49.8)	−0.92	0.38	0.010	0.38	0.08–0.91	0.097
Physicians	544 (32.8)	−1.31	0.43	<0.001	0.39	0.24–0.66	
Housekeepers	170 (10.2)	−1.11	0.36	0.016	0.29	0.32–1.26	
Workplace	Frequency of occupational HAIs			<0.001	0.31	0.04–0.47	
ICU	19 (7.2%)	262 (15.8)	−0.30	0.43	0.482	0.71	0.84–1.36	
Medical inpatient	25 (7.1%)	352 (21.2)	−0.30	0.42	0.474	0.62	1.04–2.06	
Surgical inpatient	6 (1.4%)a	425 (25.6)	−2.06	0.55	0.011	0.13	0.11–0.96	
Outpatients	4 (2.4%)	166 (10.0)	−1.43	0.62	0.022	0.23	0.34–1.86	
Operating rooms	9 (3.0%)	291 (17.5)	−1.10	0.49	0.021	.036	0.28–0.91	
Emergency department	8 (8.9%)	90 (5.4)	−0.87	0.85	0.078	0.20	0.64–2.46	
Before COVID-19 pandemic		0.92	0.26	<0.001	2.55	1.55–4.15	
Constant		−3.25	1.80	0.072			

The model was correctly predicted by 96.8% with a cut-off value of 0.5. The others department was a reference category for working place; technicians' profession was a reference category for professions; female was a reference category for gender; and during COVID-19 pandemic was a reference category for before and during the pandemic.

[a]p<0.001 (McNemar test).

CI = confidence interval; OR = odds ratio; SE = standard error, P < 0.05.

Discussion

This is the first cohort study conducted in Egypt to examine the impact of the COVID-19 pandemic on the incidence of hospital-acquired infections among HCWs. Determining the incidence of hospital-acquired infections and their contributing factors and predictors, such as the COVID-19 pandemic and related preventive measures, could contribute to better management of hospital-acquired infections among HCWs. Hospital-acquired infections can significantly affect the productivity of HCWs and, consequently, patient care.

About half of the 1660 participants in our study were nurses. The incidence of hospital-acquired infection during the COVID-19 pandemic significantly decreased compared with the same length of time before the pandemic. This can be attributed to the supplementary training and education given to staff regarding infection prevention and control measures during the pandemic. This is supported by Kakkar et al., who highlighted the significance of enhanced infection prevention and control training in mitigating hospital-acquired infection (26). Decreased participation of HCWs in direct patient care or contact with peers who may have been infected during compared with before the COVID-19 pandemic was a contributing factor. Likewise, the perceived high-risk and fear of infection among HCWs explain the increase in compliance with infection prevention and control measures, thereby decreasing hospital-acquired infections incidence (27). Jeleff et al. revealed that HCWs reduced their exposure to patients and coworkers during the pandemic to avoid hospital-acquired infections (28,29), because of the heightened awareness of the risks associated with close contact and fear of catching COVID-19.

The highest incidence of hospital-acquired infections was found among housekeepers and nurses. As the largest group of health practitioners, nurses are at the frontline of the response to patients' health needs. They deliver services to patients in close physical proximity, and their workload and high patient-to-nurse ratio may explain why they are more likely than other HCWs to have higher incidence of hospital-acquired infections. Housekeepers may lack knowledge regarding infection prevention and control measures when dealing with medical waste, and may observe low compliance with the use of personal protective equipment. This agrees with most published reports (1,30), highlighting the need for targeted interventions to address hospital-acquired infections among nurses and housekeepers.

We found that physicians had the highest RR, and they were 4.3 times more likely to report hospital-acquired infections before than during the COVID-19 pandemic. This may be because physicians had greater mobility within the hospital before compared with during the pandemic. In addition, physicians reported the highest daily contact rate with a variety of patients, which may have decreased significantly during the pandemic, as well as an increased awareness of the importance of infection prevention and

control measures. This is consistent with findings from previous studies (13), underlining the need for physicians to remain vigilant and adhere to precautions to protect themselves.

In this study, the airborne route was identified as the mode of transmission for more than half of the reported hospital-acquired infections, including pneumonia, which was the most frequently reported. This is consistent with previous research indicating that airborne transmission is the most commonly reported route of infection among HCWs (31). This may be because the airborne route of infection is difficult to control for several reasons, including widespread dispersion over large distances, especially in confined areas. Additionally, compliance with mask-wearing for an extended period is challenging, especially for nurses who must have continuous patient contact. Poor installation and poor maintenance of ventilation systems, as well as the high transmissibility of airborne or respiratory droplets carrying pneumonia-causing microorganisms, contribute to the spread of airborne infections in healthcare facilities (32). Confirmed cases of occupational pneumonia among HCWs may be deceptive minor episodes caused by asymptomatic pneumonia, and this assumption is compatible with the finding of Kleemola et al. (33).

We found that a quarter of all reported hospital-acquired infections was hepatitis C, and it was the most common type of hospital-acquired infection during the COVID-19 pandemic. This may have been due to needlestick injuries, which are a common cause of bloodborne infections. WHO has reported that occupational exposure among HCWs is the cause of 40% of cases of hepatitis B and C globally (8). This indicates that needlestick injuries have long been recognized as a frequent cause of bloodborne infections among HCWs.

The regression model revealed that working environment, profession and COVID-19 were among the most significant predictors of hospital-acquired infections among HCWs. Emergency department staff had the highest frequency of hospital-acquired infections, which may be because of the complexity of the department and the fast-paced and time-sensitive nature of the work. This causes HCWs to work in a hurry and prioritize patient care over strict adherence to infection prevention and control measures. There are also unidentified patients that doctors have insufficient information about any infectious diseases they may have. Our finding agrees with those of Sabetian et al. who reported that the highest infection rate among HCWs was in emergency rooms (34).

This study had some limitations. Although all hospital-acquired infections were reported by HCWs and confirmed by the hospitals' infection control surveillance, some infections were not investigated because they were asymptomatic, such as hepatitis B, or because workers were too ashamed to mention them. Although we considered the timing of symptom onset and exposure to certain risk factors related to healthcare settings, it is

difficult to differentiate between infections acquired in the community and those acquired at the workplace. This is a common problem with prospective and retrospective studies. The lack of routine medical screening for HCWs could have contributed to the presence of undetected infections. Therefore, a prospective approach to data collection on infectious diseases among HCWs is recommended and feasible.

Conclusion

This study found a significant reduction in hospital-acquired infections among HCWs during the COVID-19 pandemic. This reduction suggests that fear of infection led to a behavioural change among HCWs, resulting in increased adherence to infection control and prevention measures during the pandemic. Although this has contributed to a positive reduction in hospital-acquired infections among HCWs, it is important to note that it did not provide absolute protection against such infections, indicating the need for further research to investigate the underlying factors contributing to the observed reduction in hospital-acquired infections among HCWs during the pandemic. Working environment and profession significantly affected hospital-acquired infections incidence among HCWs. Specifically, housekeepers and nurses reported the highest proportion of hospital-acquired infections, while physicians had the highest RR. HCWs in the emergency department had the highest incidence of hospital-acquired infections. These findings highlight the elevated risk of hospital-acquired infections encountered by housekeepers, nurses and emergency department staff and a need for further exploration of the underlying contributing factors. Addressing these factors is crucial for implementing targeted interventions aimed at reducing hospital-acquired infections among these vulnerable groups. Infections transmitted by airborne pathogens, particularly those causing pneumonia, were the most frequently reported hospital-acquired infections, which calls for additional targeted measures.

Incidence des infections nosocomiales parmi les agents de santé en Égypte avant et pendant la pandémie de COVID-19

Résumé

Contexte : Les infections nosocomiales sont plus fréquentes chez les agents de santé que dans les autres groupes professionnels, et la pandémie de COVID-19 a accentué leur incidence.

Objectif : Évaluer l'incidence de ces infections chez les agents de santé au Caire (Égypte) pendant la pandémie de COVID-19.

Méthodes : Cette étude de cohorte rétrospective a permis de recueillir et d'évaluer les données concernant les infections nosocomiales (à l'exclusion de la COVID-19) auprès de 1660 infirmiers, médecins, techniciens et personnels d'entretien dans six hôpitaux du gouvernorat du Caire, un an avant et un an pendant la pandémie de COVID-19. Les données ont été analysées à l'aide du logiciel SPSS version 21.0 et des statistiques descriptives et inférentielles ont été utilisées pour tester l'ampleur et le sens des relations entre les variables.

Résultats : Le taux d'infections nosocomiales était de 3,1 % et de 1,3 % avant et pendant la pandémie de COVID-19, respectivement. Le risque de contracter une telle infection parmi les agents de santé, pendant la pandémie, était significativement plus faible qu'avant. L'incidence était la plus élevée parmi le personnel d'entretien (10,6 %) et les médecins présentaient le risque relatif le plus élevé (4,33 %). Avant la pandémie, la pneumonie était l'infection nosocomiale la plus fréquente (20,8 %) parmi le personnel de santé, tandis que pendant la pandémie, il s'agissait de l'hépatite C (8,3 %). Les principaux facteurs prédictifs étaient la COVID-19, avant et pendant la pandémie, la zone de travail et la profession.

Conclusion : Une réduction significative des infections nosocomiales chez les agents de santé a été observée pendant la pandémie de COVID-19, en raison d'une meilleure adhésion aux lignes directrices en matière de lutte anti-infectieuse. Le personnel d'entretien, les infirmiers et les agents des services d'urgence étaient exposés à un risque plus élevé, ce qui souligne la nécessité de mener des études plus approfondies parmi ces groupes de professionnels afin de comprendre les facteurs contributifs sous-jacents et de concevoir des interventions ciblées visant à diminuer les risques et l'incidence.

معدل الإصابة بالعدوى المكتسَبة من المستشفيات بين العاملين في الرعاية الصحية في مصر قبل جائحة كوفيد-19 وفي أثنائها

سامح الحبشي، أمين معوض، شرين جابر

الخلاصة

الخلفية: لقد لوحظ أن معدل العدوى المكتسبة من المستشفيات بين العاملين في الرعاية الصحية أعلى منها بين أصحاب الفئات المهنية الأخرى، كما يعتقد أن جائحة كوفيد-19 أدت إلى تفاقم معدل الإصابة بها.

الأهداف: هدفت هذه الدراسة الى تقييم معدل الإصابة بالعدوى المكتسبة من المستشفيات بين العاملين في مجال الرعاية الصحية في القاهرة بمصر خلال جائحة كوفيد-19.

طرق البحث: جمع وقيم الباحثون في هذه الدراسة الأترابية الاسترجاعية بيانات العدوى المكتسبة من المستشفيات (مع استبعاد كوفيد-19) من 1660 فردًا من طواقم التمريض والأطباء والتقنيين وعمال النظافة في 6 مستشفيات في محافظة القاهرة المصرية، خلال العام السابق لجائحة كوفيد-19 وكذلك خلال عام واحد من سريان الجائحة. كما خضعت البيانات للتحليل باستخدام الإصدار 21.0 من برنامج SPSS، واستُخدمت إحصاءات وصفية واستنتاجية لاختبار حجم العلاقات بين المتغيرات واتجاه تلك العلاقات

النتائج: بلغ معدل العدوى المكتسبة من المستشفيات 3.1٪ قبل جائحة كوفيد-19، و1.3٪ في أثنائها، أي أن معدل خطر الإصابة بالعدوى المكتسبة من المستشفيات بين العاملين في مجال الرعاية الصحية قلَّ كثيرًا في أثناء الجائحة عما كان عليه قبلها. ورُصد أعلى معدل إصابة بين عمال النظافة (10.6٪)، فيما كان بين الأطباء أعلى معدل خطر نسبي (4.33). وقبل الجائحة، كان الالتهاب الرئوي هو العدوى الأكثر شيوعًا من أنواع العدوى المكتسبة من المستشفيات (20.8٪) بين العاملين في مجال الرعاية الصحية، في حين كان التهاب الكبد C هو الأكثر شيوعًا (8.3٪) خلال الجائحة. أمَّا أهم العوامل المُنبئة بالعدوى المكتسبة من المستشفيات فكانت كوفيد-19 (قبل الجائحة وفي أثنائها)، ومنطقة العمل، والمهنة.

الاستنتاجات: حدث انخفاض كبير في حالات العدوى المكتسبة من المستشفيات بين العاملين في مجال الرعاية الصحية خلال جائحة كوفيد-19، ويُعزَى ذلك إلى زيادة الالتزام بتدابير الوقاية من العدوى ومكافحتها. وكان عُمال النظافة وأطقم التمريض والعاملون في أقسام الطوارئ أكثر عرضة للخطر، وهو ما يشير إلى الحاجة إلى إجراء مزيد من الاستقصاءات بين هذه الفئات من العاملين في مجال الرعاية الصحية لفهم العوامل المساهمة الكامنة، ولتصميم تدخُّلات مُوجَّهة بهدف الحد من المخاطر ومعدلات الإصابة.

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