

Scientific Paper Entitled: The Attitude Of Health Personnel Towards Infectious Diseases In The Government Health Sector In The Kingdom Of Saudi Arabia

Abdulrahman Mohammed Nahi Alotaibi^{*1}, Gahreeb Munif Matar Alotaibi², Falah Grais Turkey Alotaibi³, Khaled Abdulah Fari Alhudhyiri⁴, Awad Awadh Mazen Alotaibi⁵, Nasser Abdulrahman N Alhabess⁶, Nouf Ibrahim Abdulaziz Alsubaie⁷, Raed Muhaysin Alobaid Alotaibi⁸, Sajdi Inad D Alotaibi⁹, Talag Mohammad Talag Alharbi¹⁰, Mohammed Hamad Sulmen Alrashed¹¹, Asaeel Asaad Ajmee Alardhi¹², Amal Abdulali Almutairi¹³, Hamad Mulfi Fahad Alanazi¹⁴, Tahani Menwer Almutairi¹⁵, Badour Mayof Alanazi¹⁶, Saleha Mued Ahmad Algamy¹⁷, Najah Jubran Hassan AlFifi¹⁸.

1. *Abdulrahman Mohammed Nahi Alotaibi, A social service, Dawadmi Hospital, Ministry of Health, Kingdom of Saudi Arabia. aalotybai@moh.gov.sa
2. Gahreeb Munif Matar Alotaibi, Nursing, Alrafaya General Hospital, Ministry of Health, Kingdom of Saudi Arabia. gareeba@moh.gov.sa
3. Falah Grais Turkey Alotaibi, Social Worker, Alrafaya General Hospital, Ministry of Health, Kingdom of Saudi Arabia. fagralotaibi@moh.gov.sa
4. Khaled Abdulah Fari Alhudhyiri, Nursing Technician, Alrafaya General Hospital, Ministry of Health, Kingdom of Saudi Arabia. Kaalotaibi@moh.gov.sa
5. Awad Awadh Mazen Alotaibi, Health Informatics Technician, Dawadmi Hospital, Ministry of Health, Kingdom of Saudi. awawalotaibi@moh.gov.sa
6. Nasser Abdulrahman N Alhabess, Emergency Medical Servis, Zulfi General Hospital, Ministry of Health, Kingdom of Saudi. nalhabess@moh.gov.sa
7. Nouf Ibrahim Abdulaziz Alsubaie, General Nursing - Hospitals & Health services Administration, Marat General Hospital, Ministry of Health, Kingdom of Saudi. nalsubaie@moh.gov.sa
8. Raed Muhaysin Alobaid Alotaibi, Health Inspector, Al-Dawami General Hospital, Ministry of Health, Kingdom of Saudi. Raedotb88@hotmail.com

9. Sajdi Inad D Alotaibi, Specialist-Nursing, Dawadmi General Hospital, Ministry of Health, Kingdom of Saudi.
sajdya@moh.gov.sa
10. Talag Mohammad Talag Alharbi, Specilist -Health Administration, Al-Jawa Eye Hospital, Ministry of Health, Kingdom of Saudi. Talagma@moh.gov.sa
11. Mohammed Hamad Sulmen Alrashed, Medical Equipment Technician, King Khaled Hospital in Al-Kharj, Ministry of Health, Kingdom of Saudi. mhalrashed@moh.gov.sa
12. Asaeel Asaad Ajmee Alardhi, Nurse Specialist, Prince Mohammed bin Abdulaziz Hospital, Ministry of Health, Kingdom of Saudi. aalardhi@moh.gov.sa
13. Amal Abdulali Almutairi, Senior Socail Specialist, Al Yamamah Hospital, Ministry of Health, Kingdom of Saudi.
amal2ku@hotmail.com
14. Hamad mulfi Fahad Alanazi, Nurse Specialist, Prince Mohammed bin Abdulaziz Hospital, , Ministry of Health, Kingdom of Saudi. halanazi73@moh.gov.sa
15. Tahani Menwer Almutairi , Nursing specialist, Prince Mohammed bin Abdulaziz Hospital , Ministry of Health, Kingdom of Saudi Arabia. talmutairi21@moh.gov.sa
16. Badour Mayof Alanazi, Nursing specialist, Prince Mohammed bin Abdulaziz Hospital , Ministry of Health, Kingdom of Saudi Arabia. badourma@moh.gov.sa
17. Saleha Mued Ahmad Algamy, General Nursing, Prince Abdul Rahman Health Center, Uhud Rafidah Sector, Ministry of Health, Kingdom of Saudi Arabia.
Selahaa@moh.gov.sa
18. Najah Jubran Hassan AlFifi, General Nursing, Prince Abdul Rahman Health Center, Uhud Rafidah Sector, Ministry of Health, Kingdom of Saudi Arabia. njalfifi@moh.gov.sa

Summary

It is essential to possess sound information, a positive attitude, and adhere to conventional infection control procedures in order to stop the spread of illnesses from healthcare institutions. The KAP gaps of the healthcare workers working at a teaching hospital in Qassim, Saudi Arabia, were brought to light by our study. Experience length was inversely correlated with knowledge, which may suggest that earlier academic curricula did not sufficiently address infection management in healthcare settings. Results also discovered a favourable correlation between excellent knowledge and practice and obtaining training on standard infection control precautions. As a result, setting up training programs for HCWs may help them brush up on and expand their understanding of standard infection control precautions. It is also anticipated that these programs will encourage positive behaviour and attitudes. The study's objective is to investigate how medical professionals in the Kingdom of Saudi Arabia's public health system view infectious diseases.

Keywords: health personnel, infectious diseases, government health, Kingdom of Saudi Arabia.

Introduction

Hospital-acquired infections (HAIs) are linked to longer hospital stays, greater death rates, and higher medical expenses. HAI prevention and management is a major public health priority. Globally, the prevalence of HAIs is increasing even in the face of advances in technology and medical care. The World Health Organization (WHO) reports that 5.7% to 19.1% of hospital settings worldwide have a history of healthcare-associated infections (HAIs). According to recent studies, the prevalence of HAIs is 3.2% in the USA and 6.5% in Europe. Compared to high-income countries, the burden of HAIs is notably higher in countries with little resources. The prevalence of HAIs varies between 7.6% and 15.5% in high-income and low- and middle-income countries, according to a comprehensive review headed by the WHO. High mortality, longer hospital stays, more health care expenses, and a financial strain on families, communities, and nations as a whole are all caused by health-associated infections (HAIs). Therefore, it would seem that preventing and controlling HAIs is a crucial public health issue (Magill et al., 2018).

The main causes of healthcare-associated infections (HAIs) have been determined to be contaminated hands of healthcare workers (HCWs) and medical equipment. When healthcare workers neglect to wash their hands correctly after treating a patient and interacting with another, the bacteria that cause healthcare-associated infections (HAIs) are frequently spread from one patient to another. Different kinds of clinical departments have differing rates of HAIs. According to a Norwegian study, intensive care units have the highest infection rates, followed by neonatal and burn units (Wu et al., 2021).

The main causes of HAIs, according to the WHO, include inadequate environmental hygiene and waste disposal practices, inadequate infrastructure, a lack of manpower and equipment, overcrowding, a lack of national guidelines, and a lack of understanding of and poor application of fundamental infection control measures. The Standard Precautions, created by the Centres for Disease Control and Prevention (CDC), outline specific steps that must be taken to stop the spread of pathogens and avert health-associated infections (HAIs). It is necessary to follow a consistent protocol for all patients in all locations in order to comply with conventional infection control precautions. This recommendation is based on the idea that all patients, even those who are asymptomatic, harbour infectious agents. Hand hygiene, wearing a gown, washing and disinfecting equipment, protecting the face (masks and goggles), disposing of sharp objects, handling medical waste, and coughing etiquette are among the basic precautions. Researchers did note that Burkina Faso has a 30% compliance rate with hand hygiene recommendations, which is below average for healthcare workers. It was discovered that incorrect usage of personal protective equipment (PPE) is linked to around 42% of Corona Virus Disease-2019 cases among healthcare workers. The main obstacles to adhering to hand hygiene recommendations have been identified as being a heavy workload, drawn-out clinical procedures, and skin condition (Jin et al., 2020).

Hospital infections continue to rank among the most prevalent health issues in the Kingdom of Saudi Arabia (KSA), as evidenced by reports confirming the 2.2% monthly hospital infection rate observed by certain urban hospitals in the country. Researchers found that there is a significant need for training for healthcare workers in the Kingdom of Saudi Arabia (KSA), with over 25% of HCWs exhibiting inadequate knowledge of hand hygiene. In an effort to raise the bar for

infection control operations, the KSA has been working to implement all infection control principles. Poor knowledge, attitude, and practice (KAP) is one of the main indicators of HAIs, according to the WHO. Thus, it is essential to evaluate KAP among HCWs in order to investigate the causes of non-compliance and determine the appropriate actions to enhance infection control procedures and stop HAIs (Jiang et al., 2017).

Since infectious diseases have the potential to cause serious harm, disrupt human life, and result in numerous fatalities, their effects on the human population are extremely harmful. Effectively controlling infectious diseases and halting their spread to other areas is urgently needed. In the Kingdom of Saudi Arabia (KSA), one of the developing nations with a wide range of healthcare issues and a country with a high influx of tourists (hajj travellers), the infectious disease management (IDM) procedure must be extremely effective and efficient. A significant endemic or pandemic epidemic brought on by infectious illnesses may have disastrous consequences. Whether it was the recent Ebola outbreak or the Black Death, the globe has seen many tragic tragedies throughout history. The Saudi Arabian government has shown that it is accountable at the highest level for putting the security and welfare of its people first. This accomplishment was largely due to a number of factors, including a quick response to the pandemic warnings, vast experience with mass vaccination campaigns and prior epidemics, prudent resource management, and an unprecedented level of cooperation between the public and private sectors (AlFattani et al., 2021).

Study Problem

The attitude of health personnel towards infectious diseases in the government health sector in the Kingdom of Saudi Arabia.

Study questions

1. What are the measures to prevent and control infectious diseases?
2. What is the benefit of disease surveillance system?
3. What are the challenges in hospital infection control in KSA?

Study objectives

1. To discuss the attitude of health personnel towards infectious diseases in the government health sector in the Kingdom of Saudi Arabia.

2. To show the effectiveness of public health digital surveillance systems for infectious disease prevention and control.
3. To assess the challenges in hospital infection control in KSA.

Study limitations

- Geographical boundaries: The study will be applied in the Kingdom of Saudi Arabia.
- Time limits: The study will be implemented in 2022.
- Human limitations: The study will be applied to a sample of health personnel in the government health sector in the Kingdom of Saudi Arabia.
- Subject limits: limited to studying the “title”.

Literature Review

It is always important to emphasize the gravity of infectious diseases because they might have immediate or lasting impacts that seriously affect people's lives. Infectious infections accounted for almost 23% of all fatalities worldwide in 2012, according to a World Health Organization report. But the number of infections should also be taken into account when determining the severity, in addition to the number of deaths. An overview of the severity of infectious diseases can be provided by looking at the number of cases of TB and HIV/AIDS. Since the start of the epidemic, around 75 million people have been infected with HIV, and approximately 36 million have died from the virus. In 2012, there were approximately 35.3 million live HIV-positive individuals, and 1.6 million HIV-related deaths occurred. In 2013, there were over 9 million new cases of tuberculosis (TB) reported, and the disease was responsible for approximately 1.5 million fatalities. Thus, in order to protect human life from harm, it is imperative that infectious diseases be managed correctly. The world is evolving quickly due to new discoveries and advances in various fields of technology. Using efficient technological solutions can aid in more successfully controlling the spread of infectious diseases (Alanezi et al., 2016).

Mass Gatherings and the Transmission of Infectious Diseases

Due to documented instances of these viruses causing outbreaks, emerging and reemerging infectious illnesses like influenza, SARS, HIV/AIDS, and influenza continue to pose serious national and international public health problems. They continue to be a major global cause of mortality and a

serious public health issue in the twenty-first century. With around 15 million deaths each year, infectious diseases rank as the second most common cause of mortality in humans, according to the World Health Organization (WHO). The most frequent health risks connected to religious, athletic, and festival mass gatherings (MGs) are infectious infections. The spread of infectious diseases and their importation and exporting as they move from attendance to the general public is one of the main concerns facing MGs throughout the world. The host nation's health system is severely hampered by this spread. Traveling abroad has grown more common and speedier, which makes it easier for attendees of MG events to spread infectious diseases to locals in the host countries and vice versa (Karami et al., 2019).

Disease Surveillance

Infectious illness outbreaks must be evaluated, anticipated, and mitigated, and this requires public health surveillance. Being ready for large-scale events involves a lot of surveillance. In order to establish priorities, determine when actions are needed, and assess those interventions' outcomes, health decision makers must have fast and reliable information about infectious disease episodes. Over the past twenty years, researchers have underlined how critical it is to detect newly developing infectious illnesses and monitor the incidence of more established ones, as well as how critical it is to enhance public health monitoring. "Ongoing systematic data collection, analysis, and interpretation, closely integrated with timely dissemination of the resulting information to those responsible for preventing and controlling disease and injury" is the definition of public health surveillance (Chiolero, et al., 2020).

Monitoring infectious diseases having pandemic potential, such as influenza and SARS, and promptly identifying health events like outbreaks, particularly at large gatherings, are crucial roles played by surveillance systems. Conventional and disease-specific monitoring depends on medical facilities' and diagnostic labs' routine, passive reporting of organized, predetermined data about infectious disease episodes. Unfortunately, due to a lack of funding, time, and reporting mechanisms, indicator-based surveillance (IBS) is ineffective and insufficient data on newly developing infectious illnesses are reported. With developments in computational sciences, more surveillance techniques have surfaced to supplement IBS's limitations and enhance the sensitivity and timeliness of

surveillance systems. For communication and diagnosis, digital surveillance makes use of the internet, additional computer-based systems, and cutting-edge technology (Hayati et al., 2021).

Infection Prevention and Control in Healthcare System in KSA

In Saudi Arabia, infectious diseases have taken countless lives, despite the fact that most of them are treatable or preventable. The most common chronic infections that spread quickly among KSA residents are amoebic dysentery, chickenpox, and brucellosis, according to reports released by the Ministry of Health. An institution or healthcare facility may develop IPC quality assurance departments whose job it is to carry out infection control policies and procedures. IPC is a relatively new but developing field in Saudi Arabia, where the Saudi MOH is in charge of setting up a number of disease control and prevention centres across the country. For example, the establishment of the Command-and-Control Centre (CCC) aimed to improve infection prevention and build up methods to monitor infections both within the Kingdom of Saudi Arabia and globally. Hospital data is used by organizations like the Centres for Medicare and Medicaid to monitor hospital performance for IPC-related issues. To identify and lower the risk of infection acquisition and transmission among patients, employees, and visitors, every Saudi healthcare facility is also required to plan, implement, and oversee an infection prevention and control (IPC) program. In all of its hospitals, the MOH helped to set up infection control services. Additionally, the MOH offers all healthcare personnel field epidemiology and in-house training on infection management. In response to significant domestic demand, the Saudi Council for Health Specialties also developed a specialized training centre in infectious disease in internal medicine and paediatrics. As a result, there are currently a lot of Saudi internists and paediatricians with national training (Colet et al., 2018).

Infection Prevention and Control (IPC)

Healthcare-associated infections (HAIs) can be prevented by a variety of widely recommended measures, including isolation precautions that interrupt the risk of pathogen transmission (contact, droplet, and airborne precautions) and standard precautions (hand hygiene, use of gloves, gowns, eye protection, cough etiquette, and safe disposal of sharp instruments). Additional IPC strategies used to lower the rate

of HAIs include vaccinations for healthcare workers (HCWs), prophylaxis following exposure to bloodborne pathogens (BBPs), and prevention of specific illnesses (Umscheid et al., 2011).

HCW knowledge is essential for efficient IPC. IPC compliance is hampered by a lack of understanding of the rules, as well as by ignorance of preventive indications during routine patient care and the possible dangers of microbe transfer to patients. Insufficient understanding of the suitability, effectiveness, and use of IPC measures contributes to low compliance. The cornerstones of an improvement in IPC practices are training and education, which will help to overcome these obstacles. Health care workers need to understand that information is power. Despite education and training, there has been consistent evidence of a lack of understanding of IPC measures. Hand hygiene, donning personal protective equipment (PPE), vaccination against communicable diseases, infection modes, patient infection assessment, medical instrument decontamination, handling healthcare waste, and needle stick and sharp safety policies are all important topics that health care workers (HCWs) should be aware of. More significantly, in order to guarantee a decrease in healthcare-associated infections, HCWs must adhere to these IPC precautions, techniques, and strategies. It has been observed that HCWs' adherence to IPC practices—such as hand washing and PPE use—varies greatly, and that this variation is probably due to individual differences in behaviour and knowledge of infection risk. Good IPC practice is not always predicted by good knowledge, though. For instance, despite established guidelines for the prevention of healthcare-associated infections (HAIs), HCWs have been seen to exhibit inadequate adherence to hand hygiene procedures (Lien et al., 2018).

Hajj and Pilgrimages as a Challenge

The Islamic background, the country's former status as a major trading hub, and Bedouin customs all contribute to the definition of KSA culture. The values, rituals, hospitality, and fashion trends of the KSA's traditional society have changed to accommodate modernization. However, traditional values are taught at a young age in homes and schools because they are firmly ingrained in Islamic teachings and Arab customs. The KSA's rich religious and cultural legacy presents unique difficulties for the handling of HAIs. The annual Hajj pilgrimage, which is a customary visit to the holy city of Mecca, is a

significant obstacle to KSA's efforts to control infection. The five-day Hajj event takes place over multiple places and involves over 3 million pilgrims. The Hajj has been linked to an increase in infectious illness prevalence and transmission. It has been discovered that the prevalence of some communicable diseases rises during the Hajj event. These include blood-borne illnesses like HIV, Hepatitis B, C, and MERS-CoV, influenza virus infections, meningococcal meningitis infections, and respiratory infections like MERS-CoV. Prolonged stays at every pilgrimage location, warm ambient temperatures, packed lodging, gridlock and dust, and improper food preparation and storage all contribute to the spread of both airborne and waterborne illnesses (Khan et al., 2015).

Challenges in Hospital Infection Control in KSA

Some research indicate that the Kingdom of Saudi Arabia (KSA) suffers a number of obstacles, constraints, and hurdles to effective infection control, all of which raise the number of health problems in the nation and raise the death and morbidity rates. It is necessary to launch awareness campaigns to address the shortage of qualified infection control personnel in the majority of KSA's hospitals. But there aren't enough human resources in Saudi Arabia, especially when it comes to infectious diseases. Compared to other countries, the Kingdom of Saudi Arabia lacks the infrastructure necessary to support infection control programs. Many hospitals lack the resources necessary to provide the essential elements needed to create an efficient IPC program. Therefore, more funding must be allocated in order to create IPC components that adhere to accepted standards. These expenditures will lower the rates of related mortality and morbidity as well as the expenses of treating HAIs. In light of this, KSA healthcare facilities ought to assess their demand for infection control and implement a proactive program to lower the hazards connected to healthcare-associated infections and enhance patient safety (Assiri, et al., 2014).

Psychological Distress During an Infectious Disease

Under normal circumstances, there are a number of short- and long-term negative effects linked to psychological discomfort at work among healthcare workers. Negative occupational outcomes, such as lower patient care quality, anger toward co-workers, cognitive impairments that affect patient care, and plans to quit, are associated with psychological distress.

Psychologically distressed healthcare workers are also more likely to have negative personal outcomes, such as substance abuse and suicide (Sirois et al., 2021).

To treat the patient logically, the HCPs need to be well-versed in the most recent guidelines. They should take precautions to avoid contracting this illness in the interim. In addition to being overworked, HCPs experience anxiety of contracting the disease during a pandemic. Any nation must reconcile and advance scientifically in order to overcome any ailment through reasoned reasoning and real-world applications. It will shield HCPs from contracting the illness in addition to aiding in levelling the pandemic's trajectory. The globe has previously faced and conquered numerous pandemics. The most important thing is to adhere to the most recent recommendations made by a number of organizations, including the World Health Organization (WHO), the Centres for Disease Control (CDC), and the national ministries of health (MOH). Any country must deal with the issue of effectively disseminating information so that the community and HCPs alike adhere to the policies and procedures. There is a special role for the MOH's readiness to provide their HCPs with the most recent developments in disease management (Alduraywish et al., 2020).

Aim of the study:

To detect the attitude of health personnel towards infectious diseases in the government health sector in the Kingdom of Saudi Arabi.

Methods

Research design:

Descriptive analytic cross sectional study design to detect the attitude of health personnel towards infectious diseases in the government health sector in the Kingdom of Saudi Arabi. This design is a systematic and structured technique to collecting data from a sample of persons or entities within a broader population, with the primary purpose of producing a thorough and accurate description of the features, behaviors, views, or attitudes that exist within the target group.

Research Setting:

The study will be conducted in Al Iman General Hospital in Saudi Arabia.

Subject:

Purposive sample of 400 of health cadres, The sample will be selected according to certain inclusion criteria health cadres who working in Al Iman General Hospital in Saudi Arabia, male and female.

Sample size:

Study sample was selected via the systematic random sampling method.

The sample size is an important feature of any empirical study in which the goal is to make inferences about a population from a sample. In practice, the sample size used in a study is determined based on the expense of data collection and the need to have sufficient statistical power.

Inclusion Criteria:

The inclusion criteria were set as follows:

- (1) health cadres who working in Al Iman General Hospital in Saudi Arabia.
- (2) female and male.
- (3) from Saudi Arabia.

Sampling Technique:

Participants submitted data through a survey. Data will be collected by questionnaire.

Tools for data collection:

It will concern with Participants demographic data as age, gender, marital status and educational level. And four questions about the use of information technology in health sector in Saudi Arabia. Also questions about the attitude of health personnel towards infectious diseases in the government health sector in the Kingdom of Saudi Arabi.

Validity:

The revision of the tools were ascertained by a panel of experts to measure the content validity of the tools and the necessary modification was done accordingly.

Administrative design:

An official permission was obtained from the directors of the hospital. The official permission included the aim of the study, the tools of data collection and the characteristics of the study.

Ethical considerations

Data was provided by participants via surveys. Participants were advised that participation in the study would be optional and that their privacy would be maintained. Data will be gathered by a self-reported questionnaire. The ethics committee will provide approval for this project. Before the questionnaire was administered, each participant provided written informed permission.

Results

Validity and Reliability Tests:

Internal Consistency Reliability Calculation:

Pearson's Coefficient Correlation was calculated to verify the validity of the internal consistency between the statements of each goal and the total score for the belonging axis. This was done after the study tool had been constructed and its apparent validity had been established by presenting it to a group of arbitrators who were both specialized and experienced in the field.

The questionnaire was given to a pilot sample consisting of thirty members of the healthcare staff in order to verify its internal reliability. The researchers then calculated correlation coefficients in order to evaluate the study tool's internal validity, as the following tables demonstrate:

Table (1): Correlation coefficients of items in the first axis with the total score.

Statement number	r	Statement number	r
1	0.508**	7	0.657**
2	0.809**		
3	0.632**		
4	0.746**		
5	0.471**		
6	0.654**		

****:** p value <0.001

It is clear from the previous table that all of the statements are significant at the 0.01 level, as the values of the dimensional correlation coefficients ranged between (0.471 - 0.809), which

are excellent correlation coefficients, and this offers a hint of strong internal consistency coefficients as well. It provides strong validity indications that may be relied in utilizing the present research technique.

Reliability of the study tool:

As for testing the reliability of the questionnaire, we utilized Cronbach's alpha coefficient, and the accompanying table illustrates the reliability axis of the research instrument as follows:

Table (2): Cronbach's alpha coefficient reliability coefficient for the total score of the questionnaire

	No. of statements	Cronbach's alpha
comprehensive quality standards questionnaire	7	0.758

The table showed that the Cronbach's alpha reliability coefficient for the total score of the questionnaire was (0.758), which is a good reliability coefficient suitable for the study.

Application Method of the Study Tool:

After collecting the study data, the researchers reviewed it in preparation for inputting it into the computer for statistical analysis. Subsequently, they transcribed it onto appropriate tables, provided commentary, and linked it to previous studies. Responses were given five levels: strongly agree (5 points), agree (4 points), neutral (3 points), disagree (2 points), and strongly disagree (1 point). To determine the length of the pentavalent scale cells used in the study Phrases, the range ($5-1=4$) was calculated and divided by the number of questionnaire cells to obtain the correct cell length ($4/5=0.80$). This value was then added to the lowest value on the scale (or the beginning of the scale, which is one) to determine the upper limit of the cell. The following table illustrates the method for correcting the Likert pentavalent scale.

Table (3): Method for correcting the scale.

Scale	The weight	The average arithmetic mean value ranges
Strongly Disagree	1	From 1 to less than 1.80

Disagree	2	From 1.81 to less than 2.60
Neutral	3	From 2.61 to less than 3.40
Agree	4	From 3.41 to 4.20
Strongly agree	5	From 4.21 to 5.

Table (4): Socio demographic characteristics of the studied participants

Sociodemographic variables	Cases (n=400)	
	No.	%
Age category (years)		
Less than 25 years	85	21.25%
From 26 to 35 years	130	32.5%
From 36 to 47 years	129	32.25%
More than 47 years	56	14%
Gander		
Male	240	60%
Female	160	40%
Marital status		
single	130	32.5%
married	148	37%
absolute	122	30.5%
Job		
doctor	60	15%
pharmaceutical	80	20%
specialist	55	13.75%
Technical	72	18%
nurse	96	24%
Administrative	37	9.25%
Educational status		
Diploma or less	72	18%
Bachelor's	180	45%
Postgraduate studies (PhD - Master)	148	37%
Years of experience		
1 – 5 years	65	16.25%
6 – 10 years	102	25.5%
11 - 15 years	128	32%
16 – 25 years	105	26.25%

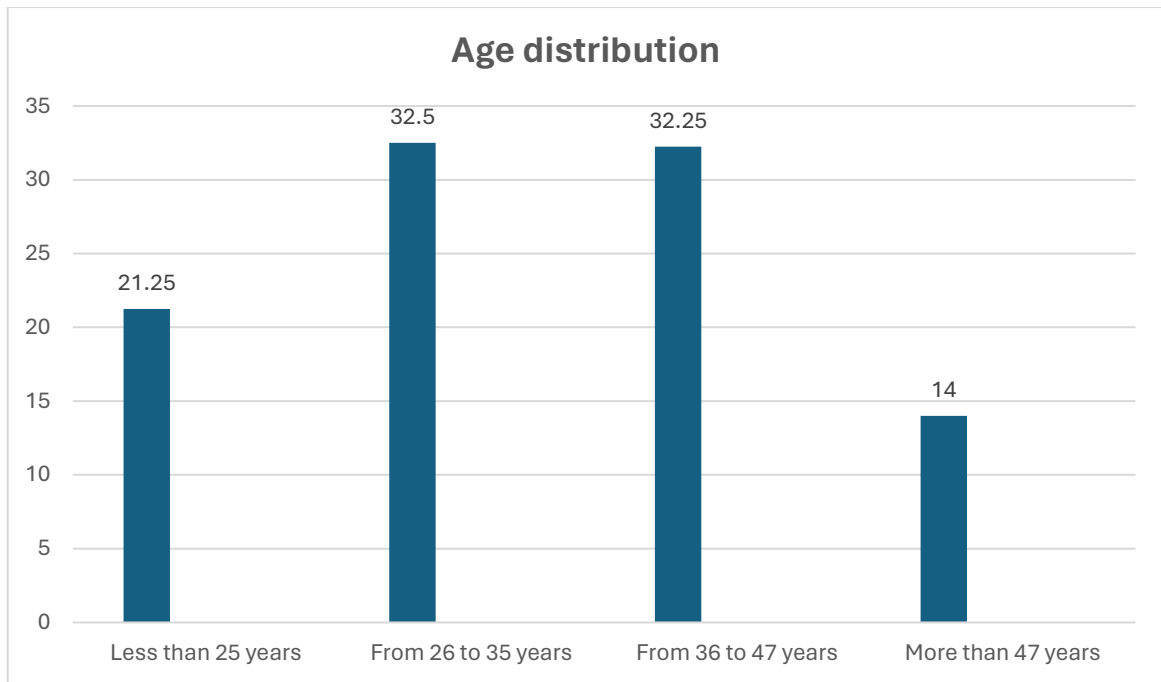


Fig (1): Age distribution among the studied participants

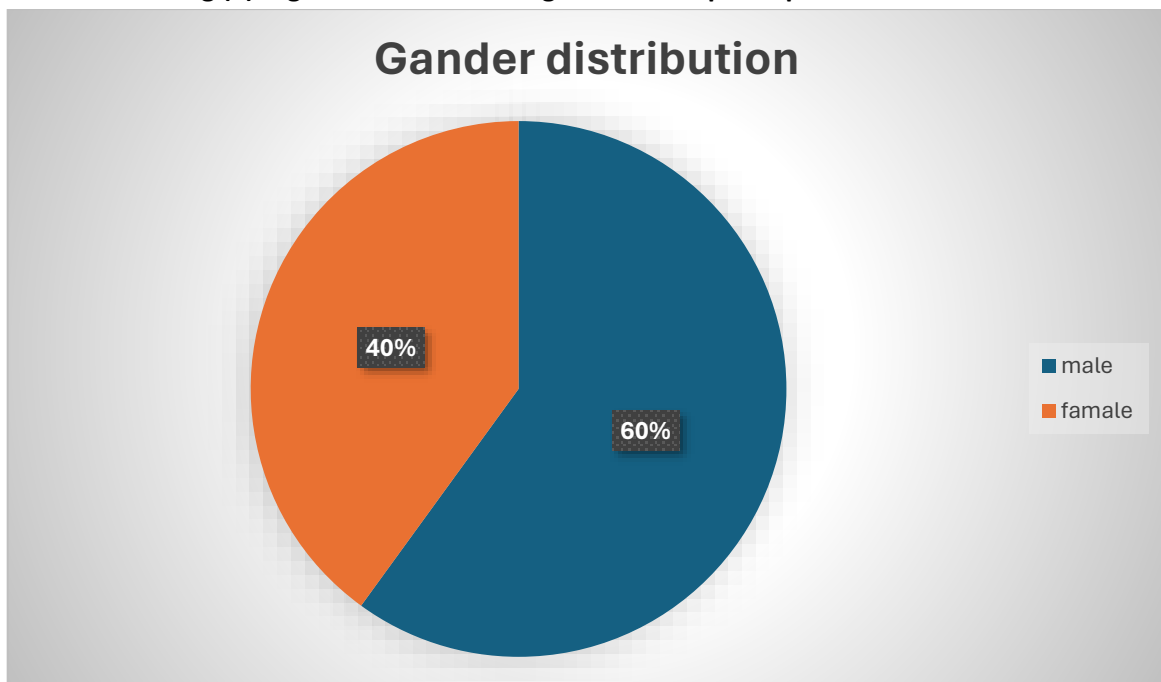


Fig (2): gander distribution among the studied participants

Table (1) & Figure (1-3) showed that 32.25% and 32.5 % of the studied participants were aged 36 -47 years and 26-35 years respectively. Regarding to the gander, more than half (60%) were males and 40% were females. 45% of the studied participants were bachelor's while only %18 was diploma or less. As regard to years of experience, 25.5% of the studied participants worked from 6 – 10 years.

Secondly: Results Related to the Axes of the Questionnaire:**Table (5): response of the studied participants regarding to Questionnaire**

No.		Cases (n=400)			
		Mean	SD	Category	Rank
1-	How concerned are you about the spread of infectious diseases in the healthcare setting?	4.21	0.823	Strongly agree	3
2-	Do you believe that infectious diseases pose a significant threat to public health in Saudi Arabia?	4.13	0.668	Agree	6
3-	How confident do you feel in your knowledge and understanding of infectious diseases?	4.01	0.694	Agree	7
4-	Have you received sufficient training on the prevention and management of infectious diseases?	4.52	0.9231	Strongly Agree	2
5-	How often do you adhere to infection control protocols and guidelines in your daily practice?	4.19	0.965	Agree	4
6-	Do you feel adequately equipped with the necessary resources (e.g., personal protective equipment, disinfectants) to prevent the spread of infectious diseases in	4.53	0.962	Strongly agree	1

	your workplace?				
7-	Do you have challenges in preventing and managing infectious diseases in the government health sector in Saudi Arabia?	4.16	0.731	agree	5
Total score		4.12	0.85	Agree	

From the results shown in Table (5), it is evident that there is variation in the agreement among the study participants regarding the comprehensive quality standards and the productivity of health personnel in the government health sector in the Kingdom of Saudi Arabia. The participants' agreement averages ranged from (4.01 to 4.53), falling into the fourth and fifth category of the Likert scale, indicating agreement to strongly agreement with the study tool. This demonstrates consistency in agreement among the study participants regarding the attitude of health personnel towards infectious diseases in the government health sector in the Kingdom of Saudi Arabi.

Phrase (6): Do you feel adequately equipped with the necessary resources (e.g., personal protective equipment, disinfectants) to prevent the spread of infectious diseases in your workplace? ranked first with an average agreement of (4.53)

Phrase (4): Have you received sufficient training on the prevention and management of infectious diseases? ranked second with an average agreement of (4.52)

Phrase (1): How concerned are you about the spread of infectious diseases in the healthcare setting? Ranked third with an average agreement of (4.21)

Phrase (5): How often do you adhere to infection control protocols and guidelines in your daily practice? ranked fourth with an average agreement of (4.19)

And last rank came to phrase (3): How confident do you feel in your knowledge and understanding of infectious diseases? with an average agreement of (4.01)

Discussion

The attitudes of health staff working in the government health sector in the Kingdom of Saudi Arabia (KSA) toward infectious illnesses are significant elements that influence the results of public health initiatives. The health care workers in the Kingdom of Saudi Arabia, in general, exhibit a high degree of worry for the spread of infectious illnesses, since they are aware of the tremendous danger that these diseases pose to public health. The potential for the fast spread of infectious illnesses inside hospital settings and the wider population is the driving force behind this increased awareness (Hayati et al., 2021).

Furthermore, there is a general consensus among health professionals in the Kingdom of Saudi Arabia that infectious illnesses pose a significant risk to public health. They recognize the possibility that outbreaks might overload healthcare systems and put the health of the community at risk. This impression is emphasized by the presence of infectious illnesses such as Middle East Respiratory Syndrome Coronavirus (MERS-CoV) and the continued difficulties faced by developing infectious pathogens (Khan et al., 2015).

While many health staff in KSA exhibit confidence in their expertise and awareness of infectious illnesses, there may be variances in readiness and adherence to infection control policies. Challenges such as resource restrictions, shortages in training, and cultural variables may hinder the consistent implementation of preventative interventions (Magill et al., 2018).

Conclusion

It is vital to hold excellent knowledge, a good attitude, and stick to traditional infection control protocols in order to halt the spread of infections from healthcare facilities. The KAP gaps of the healthcare staff working at a teaching hospital in Qassim, Saudi Arabia, were brought to light by our research. Experience duration was negatively connected with knowledge, which may reflect that older academic curriculum did not effectively cover infection control in hospital settings.

References:

1. Magill, S. S., O'Leary, E., Janelle, S. J., Thompson, D. L., Dumyati, G., Nadle, J., ... & Edwards, J. R. (2018). Changes in

- prevalence of health care-associated infections in US hospitals. *New England Journal of Medicine*, 379(18), 1732-1744.
2. Wu, W., Wang, W., Yuan, Y., Lin, L., Tan, Y., Yang, J., ... & Wang, Y. (2021). Knowledge, attitude and practice concerning healthcare-associated infections among healthcare workers in Wuhan, China: cross-sectional study. *BMJ open*, 11(1), e042333.
3. Jin, Y. H., Huang, Q., Wang, Y. Y., Zeng, X. T., Luo, L. S., Pan, Z. Y., ... & Wang, X. H. (2020). Perceived infection transmission routes, infection control practices, psychosocial changes, and management of COVID-19 infected healthcare workers in a tertiary acute care hospital in Wuhan: a cross-sectional survey. *Military Medical Research*, 7, 1-13.
4. Jiang, H., Zhang, S., Ding, Y., Li, Y., Zhang, T., Liu, W., ... & Ma, X. (2017). Development and validation of college students' tuberculosis knowledge, attitudes and practices questionnaire (CS-TBKAPQ). *BMC Public Health*, 17, 1-11.
5. AlFattani, A., AlMeharish, A., Nasim, M., AlQahtani, K., & AlMudraa, S. (2021). Ten public health strategies to control the Covid-19 pandemic: The Saudi Experience. *IJID regions*, 1, 12-19.
6. Alanezi, F. A., Hussain, F., & Yu, H. Q. (2016, August). A study on perception of managing infectious disease through social networking in the kingdom of Saudi Arabia. In 2016 IEEE Intl Conference on Computational Science and Engineering (CSE) and IEEE Intl Conference on Embedded and Ubiquitous Computing (EUC) and 15th Intl Symposium on Distributed Computing and Applications for Business Engineering (DCABES) (pp. 652-655). IEEE.
7. Karami M, Doosti-Irani A, Ardalan A, Gohari-Ensaf F, Berangi Z, Massad E, et al. Public health threats in mass gatherings: a systematic review. *Disaster Med Public Health Prep* 2019.
8. Chioleri, A., & Buckeridge, D. (2020). Glossary for public health surveillance in the age of data science. *J Epidemiol Community Health*, 74(7), 612-616.
9. Hayati, N., Ramli, K., Suryanegara, M., & Salman, M. (2021). An Internet of Things (IoT) reference model for an infectious disease active digital surveillance system. *International Journal of Advanced Computer Science and Applications*, 12(9).
10. Colet, P. C., Cruz, J. P., Cacho, G., Al-Qubeilat, H., Soriano, S. S., & Cruz, C. P. (2018). Perceived infection prevention climate and its predictors among nurses in Saudi Arabia. *Journal of Nursing Scholarship*, 50(2), 134-142.
11. Umscheid, C. A., Mitchell, M. D., Doshi, J. A., Agarwal, R., Williams, K., & Brennan, P. J. (2011). Estimating the proportion of healthcare-associated infections that are

- reasonably preventable and the related mortality and costs. *Infection Control & Hospital Epidemiology*, 32(2), 101-114.
12. Lien, L. T. Q., Chuc, N. T. K., Hoa, N. Q., Lan, P. T., Thoa, N. T. M., Riggi, E., ... & Stålsby Lundborg, C. (2018). Knowledge and self-reported practices of infection control among various occupational groups in a rural and an urban hospital in Vietnam. *Scientific reports*, 8(1), 5119.
 13. Khan, K., Arino, J., Hu, W., Raposo, P., Sears, J., Calderon, F., ... & Gardam, M. (2009). Spread of a novel influenza A (H1N1) virus via global airline transportation. *New England journal of medicine*, 361(2), 212-214.
 14. Assiri, A. M., Choudhry, A. J., Alsaleh, S. S., Alanazi, K. H., & Alsaleh, S. S. (2014). Evaluation of infection prevention and control programmes (IPC), and assessment tools for IPC-programmes at MOH-health facilities in Saudi Arabia. *Open Journal of Nursing*, 2014.
 15. Sirois, F. M., & Owens, J. (2021). Factors associated with psychological distress in health-care workers during an infectious disease outbreak: a rapid systematic review of the evidence. *Frontiers in psychiatry*, 11, 589545.
 16. Alduraywish, A. A., Srivastava, K. C., Shrivastava, D., Sghaireen, M. G., Alsharari, A. F., Al-Johani, K., & Alam, M. K. (2020). A countrywide survey in Saudi Arabia regarding the knowledge and attitude of health care professionals about coronavirus disease (COVID-19). *International Journal of Environmental Research and Public Health*, 17(20), 7415.