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**To know The Motivators and Obstacles to The Percentage of Compliance with Hand  
Hygiene Practices in Yamamah Hospital**

**Riyadh- Saudi Arabia**

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### Abstract

**Research problem:** The aim of this study was to determine the effectiveness of infection control intervention to improve compliance with hand hygiene in the Emergency Department, Al-Leith General Hospital, Saudi Arabia. We also evaluated bacterial load on hands as a possible indicator of improvement of hand hygiene compliance.

**Research question:** The current study seeks to answer the question to know The Motivators and Obstacles to The Percentage of Compliance with Hand Hygiene Practices in King Khalid University Hospital.

**Research objectives:** The objective of this research is to know The Motivators and Obstacles to The Percentage of Compliance with Hand Hygiene Practices in King Khalid University Hospital Increase awareness for the care giver about importance of HH. Obtain valid data to provided it to decision maker trying to find a solution. Knowing the barriers of not doing good HH practice Research.

**Methodology:** The researcher used the descriptive-analytical methodology where descriptive-analytical approach is one of the branches of the specialized descriptive approach,

**Study population:** The study population consists of employees at King Khalid University Hospital in Riyadh, Saudi Arabia.

**Results:** Through the results of the statistical analysis and discussion, the following results were reached. Found that that 58% of the study sample members say that the number of moments needed to perform hand hygiene is 5 times. The researcher found that between six to nine times is the most frequent answer, with 95 individuals participating in the study, with a percentage of 46.8.

**Keywords:** Motivators – Obstacles - Hand Hygiene - Yamamah Hospital

## Introduction:

From the standpoint of humanity, we must improve the good habit and try to modify the bad one to be better suitable strategy to determine behavioral change leading to improved hand hygiene compliance and reduction in HCAI rates (Allegranzi, 2010) as a health educator specialist the First thing and the height of the hump of health education is health prevention and the great phrase represent our job in general “prevention better than cure”. The good hand hygiene if use of nonantibacterial soap can prevent many diseases whether communicable or chronic to gastrointestinal and respiratory illnesses (Allison E. Aiello, 2008) and protect our body from bacteria and viruses when we want eat or drink. The world health organization says the most way to transfer infection between the health care giver themselves and the patient is dirty hand so they made the fifth of may the global day for hand hygiene and give the countries that made high score in implantation of infection control criteria good rank globally (W.H.O, 2009). The most dangers in middle east countries are 18% of patient be infected in same period when receiving their cure. (Infection prevention and control manual, 2013) .so this topic to know the magnitude of the problem and try to solve some issue related to central problem because now we know the health system in any country specially in Saudi Arabia is cost the government many budget .in this research will try to reaches to valid data about the infection acquired from health facilities to create new program or good implement of current one to deal with this huge problem.in my opinion in this time I mean covid 19 pandemic many people get interest about how to clean their hand in a propel way so I decide to choose this type of topic to approve that we need good hand hygiene whether pandemic or without it. In addition, there are a HH campaigns had shown the related factors as the "German Clean Hands Campaign" say that the compliance rate measurements helped to raise awareness among health care giver. (Hoffmann M, 2020).

According to the World Health Organization (WHO) the multimodal “Clean Care Is Safer Care” strategy and the “Five Moments for Hand Hygiene” concept should be performed (1) before touching a patient; (2) before aseptic procedures; (3) after risk of body fluid exposure; (4) after touching a patient; and (5) after touching patients’ surroundings (6,7).

The emergency department has special environmental conditions that may interfere with proper hand hygiene compliance, including crowding, use of nontraditional care areas such as hallways, frequent interruptions to care delivery, and close proximity of patients, who are often separated only by curtains (8,9). Few other studies have assessed the efficacy of hand hygiene interventions in emergency departments (10–13), and yet fewer have used the WHO “Five Moments for Hand

Hygiene". Other studies have used alternative methods (9). Due to the rapid turnover in emergency departments, it is difficult to measure HAI rates as an indicator of improvement. HAIs, by definition, develop after at least 48 hours of hospitalization, and most emergency cases are discharged on the same day.

The aim of this study was to determine the effectiveness of infection control intervention to improve compliance with hand hygiene in the Emergency Department, Al-Leith General Hospital, Saudi Arabia. We also evaluated bacterial load on hands as a possible indicator of improvement of hand hygiene compliance.

### **Research question:**

The current study seeks to answer the following question

- To know The Motivators and Obstacles to The Percentage of Compliance with Hand Hygiene Practices in King Khalid University Hospital

### **Research objectives:**

The objective of this research is to To know The Motivators and Obstacles to The Percentage of Compliance with Hand Hygiene Practices in King Khalid University Hospital The .

- 1-Increase awareness for the care giver about importance of HH.
- 2-Obtain valid data to provided it to decision maker trying to find a solution.
- 3-Knowing the barriers of not doing good HH practice.Research

### **Literature review:**

Healthcare-associated infections (HAIs) are acquired during treatment for another condition and are not present or incubating at the time of admission, and they carry a significant burden of illness and financial costs (1). Approximately 7% of hospitalized patients in industrialized nations and 10% in low- and middle-income countries are affected (2).

Hand hygiene is among the most important measures to prevent transmission and acquisition of HAIs (3). Despite recognition of the crucial role of hand hygiene in reducing infection rates, compliance rates among healthcare workers remain low (4). In a systematic review of 96 studies from industrialized nations, the overall average compliance was 40% (5).

Research indicates the COVID-19 pandemic has confirm the importance of hand hygiene practice to decrease the spread of the many viruses and bacteria that causes the disease (WHO). During clinical practice in hospitals and when the health care giver contact with

patients should ensure their clothing does not extend pathogen, local guidelines suggest that jewelers should be limited. All study in hospitals had changed their policies and procedures and provided products in compliance with Guideline recommendations; 89.8% of 1359 staff members surveyed anonymously reported that they were familiar with the Guideline.

However, in 44.2% of the hospitals (19/40), there was no evidence of a multidisciplinary program to improve compliance rate of Hand hygiene remained low (mean, 56.6%). About Changing habits Many studies says that the main reason HCWs do not wash their hands enough because they are too busy, or there are not enough hand rub dispensers available, some of them think this is not a problem. (Elaine L.LarsonRN, 2007). There is an information that said that the percentage of adherence to hand hygiene is usually high when the monitors are present in the departments and decrease dramatically when they aren't present. (Infection prevention in hospitals The importance of hand hygiene, 2014). The study indicated a cross-sectional study that was conducted in Clang Hospital in Kuala Lumpur, specifically in the intensive care unit, where 84 nurses filled out the published questionnaire, and summarized the following results: The factor of experience and years of service in nursing had a greater impact on the percentage of compliance with hand hygiene practice, with an attempt of 60%. (Ho SE, 2013) . There is a clear difference in the percentages of compliance with the practice of hand hygiene between doctors, nurses and employees, and this difference in percentages is in different departments in the hospital, and this difference was manifested in this study, as the result of the study conducted in 2018, which was Systematic Review was as follows nursing staff 43.4%, physicians

32.6%, other staff 53.8% (Lambe KA, 2019). This comprehensive study was carried out in Nigeria and the researchers used a cross-sectional study and observed the rate of compliance with the practice of hand hygiene through 559 opportunities. Compliance differed by units: Neonatology SCBU (68.2%), Intensive Care Unit (41.8%), Obstetrics & Gynecology (39.4%), Adult emergency (26.7%), Children emergency (24.6%), Medicine (22.4%), Surgery (14.9%) and Pediatrics (12.8%).

Nurses were more likely to practice hand hygiene (33.2%) compared to doctors (29.0%) (Omiye JA, 2019). Continuing to talk about the differences in measuring compliance rates, this study, despite its introduction since it was published in 2015, the results were unexpected, as this study used a double feature to measure the rate of consumption of substances, whether it was water, soap or alcohol, after observing health practitioners by researchers on Over the course of 20 weeks, they found that the compliance rate was 1078 opportunities in the ICU,

1075 in the SDU, and 517 in the hematology and oncology unit, with compliance rates of 70.7%, 75.4% and 73.3% respectively. Detergent consumption rate was measured electronically but hand hygiene compliance is reasonably high. In these units, as measured by direct observation.

However, the lack of correlation with results obtained by other methodologies raises doubts about the validity of direct observational

results (Magnus TP, 2015). One of the variables that were developed in this research proposal is whether there is a higher compliance rate in the morning or evening period, and this was indicated by the results of this study conducted at Texas Central Hospital in 2020, where the compliance rate in two units in the evening period was 25% and 50% in six units in the morning period, and this is what the outputs of this research proposal will prove. (Akram H, 2020). As mentioned previously, one of the most prominent obstacles to reaching compliance with the practice of hand hygiene and obtaining optimal results is wearing jewelry, rings, or nail extensions, as mentioned in the study conducted in Poland in 2020, which was conducted at Malpolska Hospital, and found that most of the health practitioners (173 women and 58 men) They emphasized that these wrong habits affect the increase in the spread of acquired infection (HAI). (Wałaszek M, 2020). Among the aims of this research proposal is to find out whether continuous training of the health practitioner is related to increasing the percentage of compliance with the practice of hand

hygiene or not in this study that was conducted in 2017, specifically in the Department of Trauma Recovery Status, and the health practitioners were observed while performing their duties and there were 1034. An opportunity for hand hygiene and the result was as follows: 3% before touching the patient 0% before a clean procedure 11% after contact with body fluids 15% after contact with the patient 2% after contact with the environment, so the research proposal added the cognitive aspect of the health practitioner. (Haac B & Program., 2017). When constructing the questionnaire for this research proposal, the idea was adopted that the older the health practitioner, the more committed he was to practicing hand hygiene. Those under the age of 30 have higher compliance rates than their peers under the age of 30. (Ra'awji BAA, 2018). Compliance rates vary between different health groups and also differ in different departments, and this was proven by this study, which was conducted in two different departments: the obstetrics department and gastro-intestinal surgery in a hospital in Benin in 2020. The result was that half of the participants in this research, i.e. 50%, complied with hand hygiene. In the obstetrics department, the compliance rate was 24% in gastro-



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intestinal surgery. (Yehouenou CL, 2020).

### **Research methods:**

In This research will use mixed method quantitatively and qualitative research to describe the variable that prevent health care giver from doing HH practices socially, illiteracy, cultural and knowledge trying to increase awareness to avoid the causes. about the number in this research want to get data base about how specifically which department for example ICU, ER is great too. The sample will be chosen randomly after get the data to present the areas. will choose King Khalid university hospital will be start of this study in 2022 give them survey electronic questioner. in the final of the study (September 2022) will take the surveys to analyst data then share the result after approval.

### **Methodology:**

The researcher used the descriptive-analytical methodology where descriptive-analytical approach is one of the branches of the specialized descriptive approach, which was one of the developments that scientific researchers added to the image of the original, primitive descriptive approach, in which the descriptive-analytical approach has an additional, more flexible and useful function beside describing the phenomena through observation and its various methods, where It does what is called the analysis and comparison of phenomena in more detail..

Hence, the definition of the analytical descriptive approach is that it is that in-depth descriptive approach, in which the scientific researcher describes the various scientific phenomena and problems, and solves the problems and questions that fall within the circle of scientific research, and then the data collected is analyzed through the descriptive approach. So that the appropriate explanation and results can be given about that phenomenon, and the scientific researcher can also, through the descriptive-analytical method, put the different phenomena in comparisons between similar phenomena, so that different data can be collected about the differences and similarities between those phenomena, which are the most important features that The descriptive analytical method is distinguished from other scientific methods, and its uses in scientific research are greatly enhanced.

### **Research design:**

In this research will use quantity and quality (mixed method) to answer the research



question.

### **Study population:**

The study population consists of employees at King Khalid University Hospital in Riyadh, Saudi Arabia.

### **Participants:**

- To answer the research question the researcher was chosen all the variable staff in health facility (health administrative employ) with full cover is equal total population 203 participants to get valid data.

### **Data collection:**

After send an electronic survey will wait for a month to get a complete population number (203). Almost of question is true and false and (MSQ) to be easy to submit for the participant.

### **Data analysis:**

To analyzing data the researcher used software SPSS version 24. Data will be cross-tabulated, and frequencies will be approximated.

### **Descriptive statistics**

Descriptive statistics is a brief description of a large set of data or a set of methods used to facilitate the quantitative description of the main characteristics of the data, using tables and graphs to facilitate understanding for the user.

### **Impact of the research in Saudi Arabia:**

If the research had the desired result, which is to know the reasons preventing the practice of hand hygiene in health facilities among health workers, there would have been accurate information that could be relied upon by decision-makers to raise compliance rates; As mentioned earlier in this research, the inhibiting reasons are rooted and difficult to control. Several studies have been published on this subject; Therefore, the importance of the results of this research should be taken into account if the health practitioner is aware of the importance

of the risk of unclean hands in transmitting infection; In the end, the data obtained from this research will be reviewed with the concerned authorities in the Kingdom of Saudi Arabia to find out how to apply the results on the ground in order to develop laws and regulations supporting the problem discussed in the research.

## Results

In this part of the research, the researcher presents the results of the statistical analysis of the data collected from the study sample individuals. As the study sample size is equal to 204 individuals working at King Khalid Hospital

**Table 1: Demographic characteristics of the study participants**

Variable	Frequency	%
<b>Sample size</b>	203	100
<b>Gender</b>		
Male	90	44.
Female	113	56.
<b>Years of Experience</b>		
10 and more	25	12.3
3-1	39	19.2
4-5	69	34
6-9	70	34.5
<b>Shift Time</b>		
Evening	66	32.5
Mid night	25	12.3
Morning	112	55.2
<b>Age Group</b>		
18-25	14	7.
26-35	71	35.
36-44	64	31.
45 or more	54	27.

From the above table, we find that the number of the study sample is 203 individuals, of whom 90 are males with a rate of 44% and 113 are females with a rate of 56%, and we find that the number of years of experience from 10 and more is 25, with a ratio equal to 12.3, and the number of years

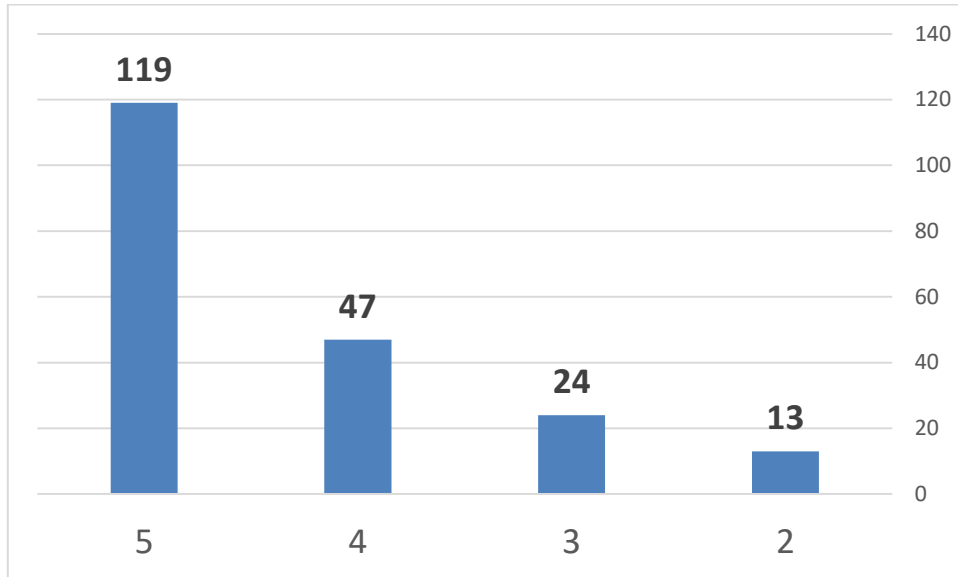
of experience for sample individuals The study is from 3-1, their ratio is 19.2%. As for the members of the study sample, whose percentage is equal to 34 and their number is equal to 69, the number of years of their experience is four to five years. As for those whose period is from 6 to 9 years, their number is equal to 70 individuals with a percentage of 34.4%. As for the shift time, 35.5 of the study sample members prefer Evening, while 12.3 and 25 people prefer Mid night, while the majority of the study sample, which numbered 112 individuals, 55.2%, prefer the morning shift. As for the age distribution of the study sample members, 14 of them, or 7%, are in the 18-25 age group, and the 26-35 age group is 71 with a rate of 35%. As for the study sample members in the age group from 36-454 years, their number It is equal to 64, with a percentage equal to 31%. As for the category of 45 years or more, their number is 54 individuals, with a percentage equal to 27.7%.

**Tabel 2:How many moments are needed to perform hand hygiene**

Variable	Frequency	Percent
2	13	6.4
3	24	11.8
4	47	23.2
5	119	58.6
Total	203	100.0

Through the above table, found that that 58% of the study sample members say that the number of moments needed to perform hand hygiene is 5 times, as their number reached 119 members of the study sample. We also find that 47 of them, with a rate of 23.2, say that the number of moments needed to perform hand hygiene is Four times in love, 24 of the study sample members, with a rate of 11%, say that the number of moments needed to perform hand hygiene is equal to 3 times, and there are 13 members of the sample participating in the study who say that the number of moments needed to perform hand hygiene is equal to only twice. Accordingly, we find that there are significant differences between the study sample members in the number of moments needed to perform hand hygiene. This is as shown in Figure 2.

**Tabel 2:How many moments are needed to perform hand hygiene**



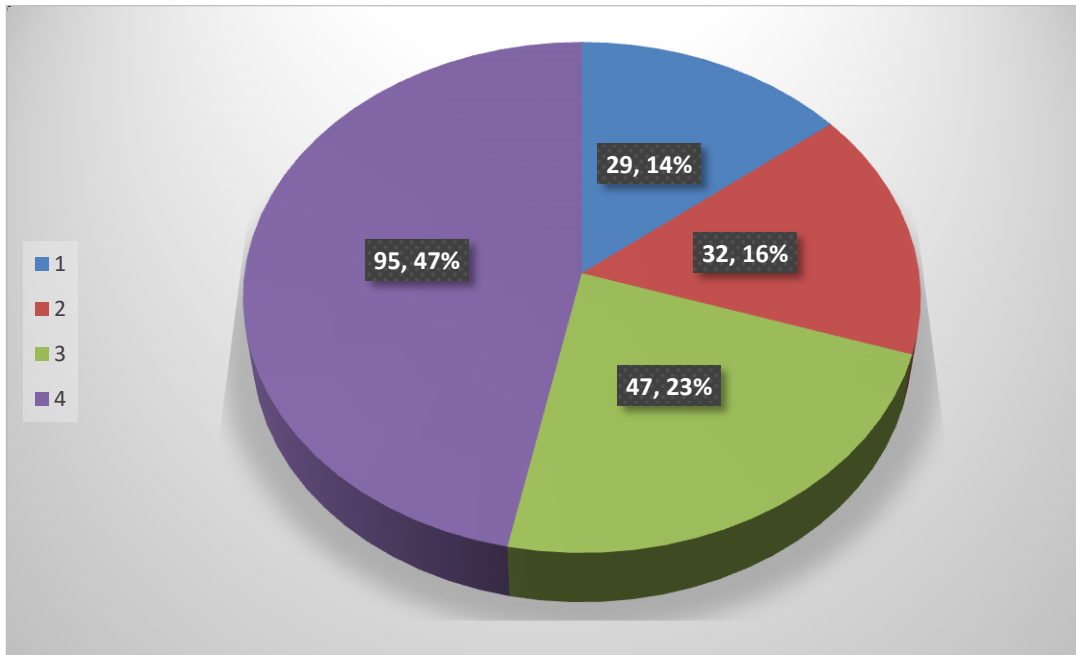
**Table3:Through ten times the practice of hand hygiene is required; How often do you practice hand hygiene**

	Frequency	Percent
1-3	29	14.3
10	32	15.8
4-5	47	23.2
6-9	95	46.8
Total	203	100.0

Through the results of the above table, Found that the answers of the study sample members to the phrase ten times require the practice of hand hygiene; How often do you practice hand hygiene? The researcher found that between six to nine times is the most frequent answer, with 95 individuals participating in the study, with a percentage of 46.8, followed in the order from four to five times, with 47 individuals and a percentage equal to 23.2. We find that individuals who

perform hand hygiene ten times out of the required ten times, their percentage is 15.8 and their number is 32 people. As for those who do this from one to three times, their number is small, equal to 29 individuals, or 14%. This is as shown in Figure 3.

**Fig3:practice Through ten times the practice of hand hygiene is required; How often do you hand hygiene**

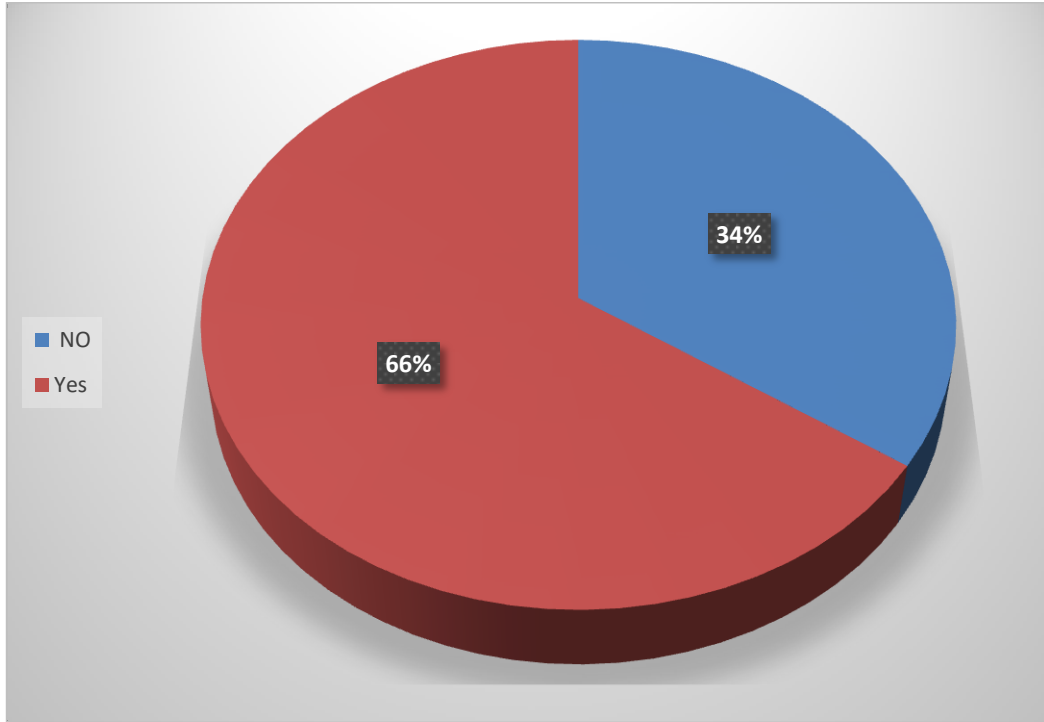


**Table4:based hand sanitizer to practice hand hygiene-Do you often use alcohol**

	Frequency	Percent
Valid NO	70	34.5
Yes	133	65.5
Total	203	100.0

From the above table, Found that 133 individuals from the study sample, with a percentage of 65.5, use alcohol sanitizers often in the practice of hand hygiene, while 70 individuals, with a percentage equivalent to 34.5, do not use alcohol sanitizers often in the practice of hand hygiene, as shown in Figure 4.

**Fig 4:based hand sanitizer to practice hand hygiene-Do you often use alcohol**



**Table 5: alcohol-based sanitizer take to kill most germs on the hand-How long does alcohol**

	Frequency	Percent
Valid seconds- 0-19	22	10.8
seconds - 20-39	52	25.6
seconds - 40-49	98	48.3
seconds - 50-59	31	15.3
Total	203	100.0

Through the above table, the researcher found that the study sample members answered the question "How long does alcohol-based sanitizer take to kill most germs stuck to the hand?" We find that 10.8 of them said between 0-19-seconds. and 25.6 of them said between 20-39-seconds and also we find that 48.3 of them said between 40-49-seconds and only 15.3 said between 50-59-seconds

**Table 6:time for washing hands with soap and water What is the ideal**

	Frequency	Percent
Valid seconds- 19-0	19	9.4
seconds - 40-20	40	19.7
seconds - 60-41	114	56.2
minute or more	30	14.8
Total	203	100.0

From the above table, we find that 114 of the study sample members, with a percentage of 56.2, agree that the ideal period for the process of washing hands with water and soap is from 41-60-seconds, and we also find that 40 individuals from the study sample and with a percentage of 19.7 say that the ideal period for the process of washing hands with water is Soap is between 20-40 seconds.

**Table7: Have you ever been informed by one of your colleagues that you have failed even once in the practice of hand hygiene**

	Frequency	Percent
Valid NO	108	53.2
Yes	95	46.8
Total	203	100.0

From the above table, we find that 108 of the study sample members, with a percentage of 53.2, had never been informed by one of their colleagues that they had failed even once in practicing hand hygiene, and in contrast, we found that 95 of the study sample members, with a percentage of 46.8, had previously been notified by one of their colleagues. That he had fallen short even once in the work of practicing hand hygiene.

**Table:8 administration for a person Is there any penalty from the department or hospital who fails to practice hand hygiene**

	Frequen cy	Percent
Valid NO	61	30.0
Yes	142	70.0
Total	203	100.0

From the above table, we find that 70 of the study sample members agree that there is a penalty from the department or hospital administration for the person who fails to practice hand hygiene, and that 30% of the study sample say there is no penalty from the department or hospital administration for the person who fails to practice hand hygiene. hand hygiene.

**Table 9 :Has a patient ever asked you to perform hand hygiene before performing any procedure for him**

	Frequen cy	Percent
Valid NO	75	36.9
Yes	128	63.1
Total	203	100.0

From the results of the above table, we find that 128 of the study sample members, with a percentage of 63.1, say that one of the patients had previously asked them to perform hand hygiene before performing any procedure for it, and this indicates the patients' concern for their health and their knowledge and awareness of the importance of sterilization. One of them is one of the patients who performs hand hygiene before performing any procedure for him, and their number is 75, with a percentage of 36.9. As shown in the figure below.

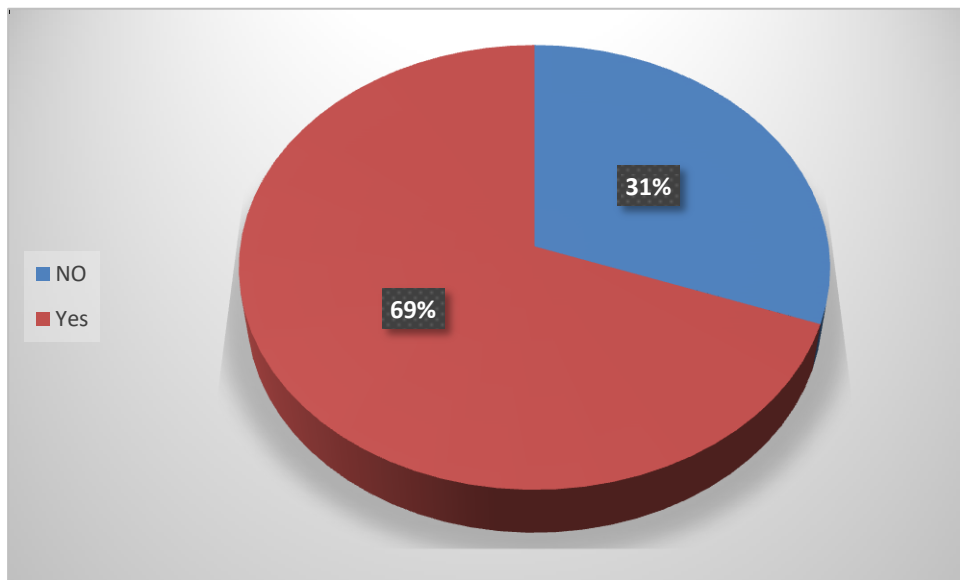


**Table10 :Does the hospital’s infection control department provide you with the latest updates in this field**

variable	Frequen cy	Percen t
Valid NO	62	30.5
Yes	141	69.5
Total	203	100.0

From the above table, the researcher found that 141 of the study sample members and a percentage of 69.5 agree that the infection control department in the hospital provides you with the latest updates in this field, while 62 individuals and a percentage of 30.5 do not agree that the infection control department in the hospital provides you with the latest updates in this field It is as in the figure10

**Fig10 :Does the hospital’s infection control department provide you with the latest updates in this field**



### **Did one of your colleagues tell you that you did not sanitize your hands even once in practicing hand hygiene?**

To answer this question, the researcher found that 50% of the study sample members were given by a colleague who received advice and guidance to sterilize hands before starting to deal with the patient, and one of the specialties of one Colleagues specialized in the health field. As for those who received advice and guidance through a colleague in the administrative specialization, their percentage represented 3% of all those who received advice on sterilization before dealing with the patient.

As for those who received advice to sterilize before dealing with the patient, the advice was given by the patient himself so that he instructs the doctor to sterilize his hands before dealing with him, and that was 5% of all those who received advice from the patients they treat.

We also find that those who received advice from co-workers in the health and medical specialization on the necessity of sterilization were in the 18-25 age group, with a rate of 33%. We also find that those who received advice and guidance on sterilization were workers with little practical experience, where the percentage reached 12% of those who received co-workers In the health and medical specialization, the necessity of sterilization, and their practical experience did not exceed three years.

### **Discussion**

Through the results that were reached in the previous part of this research, and in this part the results that were reached will be discussed.

The researcher found that the demographic characteristics of the study sample members are represented in the following results: the number of the study sample is 203 individuals, of whom 90 are males with a rate of 44% and 113 are females with a rate of 56%, and we find that the number of years of experience from 10 and more is 25, with a ratio equal to 12.3, and the number of years of experience for sample individuals The study is from 3-1, their ratio is 19.2%. As for the members of the study sample, whose percentage is equal to 34 and their number is equal to 69, the number of years of their experience is four to five years. 58% of the

study sample members say that the number of moments needed to perform hand hygiene is 5 times, as their number reached 119 members of the study sample. We also find that 47 of them, with a rate of 23.2, say that the number of moments needed to perform hand hygiene is Four times in love, 24 of the study sample members, with a rate of 11%, say that the number of moments needed to perform hand hygiene is equal to 3 times. This results Agreed with (Omiye JA, 2019). Continuing to talk about the differences in measuring compliance rates, this study, despite its introduction since it was published in 2015, the results were unexpected, as this study used a double feature to measure the rate of consumption of substances, whether it was water, soap or alcohol, after observing health practitioners by researchers on Over the course of 20 weeks, they found that the compliance rate was 1078 opportunities in the ICU, 1075 in the SDU, and 517 in the hematology and oncology unit, with compliance rates of 70.7%, 75.4% and 73.3% respectively Detergent consumption rate was measured electronically but hand hygiene compliance is reasonably high In these units, as measured by direct observation. Through the results of the above table, found that the answers of the study sample members to the phrase ten times require the practice of hand hygiene; How often do you practice hand hygiene? And these results agreed with (Olena Doronina RN, 2017) the research to share the result with decision maker trying to solve the problem and publish it to the community to increase the awareness of them to reach a health community. now in the world the health system had been related to the social, economy determinants and standard of living and income for the person. finally, if the health system strong it will help other systems to be strong too. There is no doubt that most cases of transmission of infection associated with health facilities are the lack of hygiene of hands, and the purpose of this is the nursing staff, so several attempts must be made to intervene to limit the spread of infection.

To based hand sanitizer to practice hand hygiene-use alcohol , Found that 133 individuals from the study sample, with a percentage of 65.5, use alcohol sanitizers often in the practice of hand hygiene, while 70 individuals, with a percentage equivalent to 34.5, do not 5 use alcohol sanitizers often in the practice of hand hygiene. This result are agreed with . (Elaine L.LarsonRN, 2007). in 44.2% of the hospitals (19/40), there was no evidence of a multidisciplinary program to improve compliance rate of Hand hygiene remained low (mean, 56.6%). About Changing habits Many studies says that the main reason HCWs do not wash their hands enough because they are too busy, or there are not enough hand rub dispensers available, some of them think this is not a problem.

the researcher found that 141 of the study sample members and a percentage of 69.5 agree that the infection control department in the hospital provides you with the latest updates in this field, while 62 individuals and a percentage of 30.5 do not agree that the infection control department in the hospital provides you with the latest updates in this field. This result are agreed with (Wałaszek M, 2020). As mentioned previously, one of the most prominent obstacles to reaching compliance with the practice of hand hygiene and obtaining optimal results is wearing jewelry, rings, or nail extensions, as mentioned in the study conducted in Poland in 2020, which was conducted at Malpolska Hospital, and found that most of the health practitioners (173 women and 58 men) They emphasized that these wrong habits affect the increase in the spread of acquired infection (HAI).

## Conclusion

Through the results of the statistical analysis and discussion, the following results were reached.

- Found that that 58% of the study sample members say that the number of moments needed to perform hand hygiene is 5 times.
- The researcher found that between six to nine times is the most frequent answer, with 95 individuals participating in the study, with a percentage of 46.8.
- 133 individuals from the study sample, with a percentage of 65.5, use alcohol sanitizers often in the practice of hand hygiene.
- Study sample members answered the question "How long does alcohol-based sanitizer take to kill most germs stuck to the hand?" We find that 10.8 of them said between 0-19-seconds. and 25.6 of them said between 20-39-seconds and also we find that 48.3 of them said between 40-49-seconds and only 15.3 said between 50-59-seconds.
- There is 108 of the study sample members, with a percentage of 53.2, had never been informed by one of their colleagues that they had failed even once in practicing hand hygiene.
- There is 70 of the study sample members agree that there is a penalty from the department or hospital administration for the person who fails to practice hand hygiene.
- There is 128 of the study sample members, with a percentage of 63.1, say that one of the patients had previously asked them to perform hand hygiene before performing any procedure for it, and this indicates the patients' concern for their health and their knowledge and awareness of the importance of sterilization.
- There is 141 of the study sample members and a percentage of 69.5 agree that the infection

control department in the hospital provides you with the latest updates in this field, while 62 individuals and a percentage of 30.5 do not agree that the infection control department in the hospital provides you with the latest updates in this field.

### Recommendations

Through the results obtained, the researcher recommends the following:

- Attention to the process of raising awareness and spreading the importance of sterilization among all hospital staff.
- Putting indicative posters for sterilization in clear places with a focus on how to sterilize .
- Providing sterilization materials and disinfectants in the appropriate places.
- Training workers to sterilize a number of times a day, while spreading the danger of non-sterilization on health treatment and the patient alike

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