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Implementing Hand Hygiene Protocol for Direct Care Staff in an Inpatient Psychiatric Facility to Improve Hand Hygiene Compliance

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Implementing Hand Hygiene Protocol for Direct Care Staff in an Inpatient Psychiatric Facility to Improve Hand Hygiene Compliance

A DNP Project Submitted
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By

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Abstract

Background: Handwashing with soap and running water is one of the most effective ways to prevent diseases and infections spread through touch. Hand hygiene refers to handwashing with soap, water, and other disinfecting agents to prevent infection. According to Chassin et al. (2017), hand hygiene compliance reduces healthcare-associated infections (HAI). Studies show that an increase in handwashing compliance can be correlated to a decrease in healthcare-associated infections. Studies have proven that though it is challenging to link hand hygiene to a reduction in healthcare-associated infections directly to improved hand hygiene compliance, many hospitals have seen a decline in HAIs as the hand hygiene rate of compliance increased.

Purpose: The Doctor of Nursing Practice (DNP) project aims to educate direct healthcare workers in an inpatient psychiatric facility to meet Joint Commission on Accreditation of Healthcare Organizations (JCAHO) standards by implementing a hand hygiene protocol to improve hand hygiene compliance.

Methods: This quality improvement project involves a hand hygiene recruitment script posted at the staff office to invite staff to participate. The World Health Organization's (n.d.) Perception Survey for Health-Care Workers (PSHCW) was used for the pre-and post-assessment to evaluate for insight before and after education. Applied Glow-germ on direct health care workers' hands and observed staff wash hands using soap and water. An ultraviolet black light (UV blacklight) was used to inspect how well the team washed their hands. The UV black light glows on germs left unwashed. The CDC proper handwashing procedure ("Stop Germs! Wash Your Hands") was used to educate the direct health care workers.

Results: The key result is that the inpatient psychiatric healthcare workers on the day, evening, and night shift were educated and practiced hand hygiene using CDC's and WHO's program that

follows categories 1A, 1B, and 1C guidelines. The guidelines meet JCAHO's standards resulting in the organization having established data on hand hygiene performance and an active process for surveillance and monitoring hand hygiene compliance.

Conclusion: The project addressed JCAHO's hand hygiene standards for the facility and meets the 1A, 1B, and 1C categories on hand hygiene compliance. The hand hygiene education, pre and post-test, and performance established data needed to meet JCAHO compliance.

Keywords: hand hygiene, compliance, healthcare workers, quality improvement

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Implementing Hand Hygiene Protocol for Direct Care Staff in an Inpatient Psychiatric Facility to Improve Hand Hygiene Compliance

HAIs impact hundreds of millions of patients resulting in prolonged hospital stays, more severe illnesses, high costs to patients and families, induced long-term disabilities, financial burden on the health care system, and loss of life (Haque et al., 2018). The infections are caused by various factors related to processes and systems of human behavior and care provision conditioned by educational and political constraints on the societal norms, systems, and beliefs. Healthcare-associated infections are preventable through hand hygiene, a primary measure used by most healthcare organizations to reduce infections. Hand hygiene monitoring, compliance, and feedback helps reduce hospital-associated infections (Hillier, 2020). According to Joint Commission on Accreditation of Healthcare Organizations (JCAHO), for all healthcare programs to be fully compliant with National Patient Safety Goals (NPSG) 07.01.01 and standard precautions, organizations must implement a hand hygiene program that follows categories IA, IB, and IC of either the current Centers for Disease Control and Prevention (CDC) and/or the current World Health Organization (WHO) hand hygiene guidelines (Chassin, 2017; JCAHO, n.d.; CDC, 2019).

Each category for the CDC and WHO hand hygiene guidelines provides standards for isolation precautions and preventing transmission of infectious agents in healthcare settings. CDC's category 1A recommends that hands should be washed with either a nonantimicrobial soap and water or an antimicrobial soap and water when hands are visibly dirty or visibly soiled with blood or body fluids. CDC's category 1B recommended that instructions be provided for performing hand hygiene in an inpatient setting. CDC's category 1C recommended that during

the delivery of healthcare, to avoid unnecessary touching of surfaces to prevent both contamination of clean hands from environmental surfaces and transmission of pathogens from contaminated hands to surfaces (CDC, 2021).

According to the CDC (2018), deaths associated with HAIs are attributed to the suboptimal practice of healthcare workers (HCWs), specifically low adherence to hand hygiene Hand hygiene is a simple action, but failure and lack of compliance among patients and healthcare professionals tend to be problematic across the globe. According to the CDC, around 2.5 million HAI incidences are linked to approximately 90,000 preventable deaths and more than $4.5 billion in financial costs. Hand hygiene is a cost-effective and significant measure of preventing HAIs.

The CDC has established evidence-based practice guidelines to help reduce the prevalence of HAIs. The guidelines also emphasize improving healthcare workers' (HCW) hand hygiene compliance practices as an effective method of reducing the transmission and prevalence of HAIs (CDC, 2017). The CDC also recommends instituting HCW hand hygiene guidelines and adherence to the six patient hand hygiene moments. The hand hygiene moments include before eating, before touching your mouth, nose, or eyes, before and after changing bandages, after visiting the restroom, after coughing or sneezing, and after touching hospital surfaces (CDC, 2017).

However, there is decreased hand hygiene compliance amongst healthcare workers. Therefore, some strategies could be implemented for improving hand hygiene compliance. WHO has developed a range of strategies primarily focusing on improving hand hygiene practices and standards in health care. In addition, the CDC developed a guideline, “Stop Germs! Wash your Hands," flyer for educational purposes to improve compliance (CDC, 2021).

The primary objective of this research is to improve hand hygiene compliance through educating direct care staff on hand hygiene guidelines. A secondary objective is to improve institutional compliance with JCAHO guidelines regarding HAIs.

Background

The prevalence of HAIs is currently at 15.5 per 100 patients in the U.S. (Haque et al., 2018). However, hand hygiene compliance rates remain low globally, especially among healthcare workers who do not practice hand hygiene (WHO, n.d.). Therefore, to improve hand hygiene, WHO adopts and recommends implementing multimodal approaches to strengthen and promote compliance with hand hygiene, especially among direct healthcare staff, focusing on increasing awareness and adherence to hand hygiene (Ellingson, 2017).

According to the CDC, washing hands with soap and water could reduce 50% of deaths. Similarly, it is estimated that if all people maintained regular handwashing, over a million deaths worldwide could be prevented every year (CDC, 2018). Handwashing compliance with soap and water, therefore, proves to be crucial for the community and prevention of illnesses.

Needs Analysis

The gap identified is that the inpatient psychiatric facility did not meet JCAHO standards on hand hygiene compliance. According to the JCAHO, there has not been any current hand hygiene implementation data to direct care staff in the inpatient psychiatric facility in the study setting. Reports indicate that the organization did not meet hand hygiene compliance based on categories 1A, 1B, and 1C of CDC and WHO standards (Table 1 and Table 2).

The project cost estimate and data were collected before embarking on this study (Table 3). During the project implementation process, the Principal Investigator (PI) observed two units not using their resources properly because the sinks were obstructed with other things, such as a

water cooler and backpack. The outcome of this DNP project was used to acquire data and develop an active process for hand hygiene to address surveillance and compliance.

Problem Statement

The underlying problem for intervention is the lack of data on hand hygiene and failure to meet JCAHO's hand hygiene compliance. Most nosocomial infections result from pathogens transmitted among patients by health care workers who do not wash their hands and do not practice the control measures, such as washing their hands with water and soap or using hand sanitizer (Fürnkranz & Walochnik, 2021). WHO postulates that the failure to adopt and adhere to the appropriate practices is the leading cause of increased nosocomial infections incidence (Ellingson, 2017). In addition, compliance with either the Centers for Disease Control and Prevention or the World Health Organization's guidelines for hand hygiene is one of the National Patient Safety Goals monitored by the Joint Commission (Chassin et al., 2017). The question addressed during this project was, does implementing the Centers for Disease Control and Prevention's (CDC) "Stop Germs! Wash Your Hands" to inpatient psychiatric direct care staff improve hand hygiene compliance in the facility?.

Aims and Objectives

This project aims to improve hand hygiene compliance and meet JCAHO's standards for handwashing recommendations for direct care staff in an inpatient psychiatric facility. The objective is to educate and implement hand hygiene practices for the facility to be compliant. In addition, this project will result in the development of hand hygiene monitoring guidelines, implementation of a program for handwashing standards, establish policies for hand hygiene compliance, develop surveillance plans for compliance and by meeting JCAHO categories 1A, 1B, and 1C guidelines of either the CDC or WHO hand hygiene guidelines (Table 1 and Table

2). The WHO perception survey was used to evaluate healthcare workers opinion on hand hygiene (WHO, n.d.).

Review of Literature

Many organizations are establishing handwashing monitoring tools in their facility to ensure that their nurses, doctors, administrators, and others comply with their handwashing strategies. In a study by Read et al. (2017), the researchers found that integrating monitoring tools increased handwashing compliance within the organization by 85%. Ellison et al. (2017) found similar results and argued that healthcare staff who are monitored for proper health hygiene are more compliant. These researchers agreed that the monitoring tool increases hand hygiene compliance.

WHO guidelines recommend that a person should wet their hands, run warm water, apply soap, lather hands, rub them together, scrub for 20 seconds, then rinse and dry them (WHO, n.d.). Nevertheless, different institutions have different hand washing practices. Some organizations suggest that soap and water be the primary items used. In contrast, other organizations suggest that chemicals, solutions, and other items be used to reduce infections and meet compliance. Some organizations place high priority on the amount of time handwashing occurs. Baraldi and Padoveze (2019) claimed that hands should be washed with chemical solutions and then rinsed and washed with soap. Each of these approaches has been implemented in different healthcare settings and researched to demonstrate the effectiveness of each strategy.

In a study, Yazaji (2018) supported various handwashing strategies, but indicated that healthcare organizations should train their staff members to ensure compliance. The staff should be taught to wash their hands whenever they are visibility dirty or use alcohol-based products in other situations when they are merely moving from room to room or touching and engaging with

patients. Yazaji (2018) concurred with the WHO guidelines but suggested that healthcare organizations be provided leeway to consider other strategies.

Though the processes may differ, hand hygiene has been introduced worldwide, and different standards have been used. Instead of relying on bathing alone, Kumar (2017) promoted the importance of handwashing by caregivers to counter infections among staff and patients (Kumar et al., 2017). Healthcare providers should be intensively educated on the benefits of thorough hand washing before caring for patients. Kumar (2017) made efforts to get people to practice handwashing by setting up forty handwashing stations. Even after intensified efforts to encourage people to practice hand washing, Kumar realized that there was a gap in the number of people that practice hand washing.

The WHO (n.d.) most recent hand hygiene guidelines reviewed the science behind hand hygiene, providing consensus recommendation based on varying clinical and research evidence, suggestions for monitoring hand hygiene processes and outcomes in health care settings, comparison of various hand hygiene strategies, and insight into different techniques used for hand hygiene improvement. An essential concept among the recommendations was identifying "five moments" requiring hand hygiene (WHO, n.d.). These moments are recognized as the following: 1) before patient contact, 2) after patient contact, 3) before a clean or aseptic procedure, 4) after potential exposure to body fluids, and 5) after contact with patient surroundings (WHO, n.d.). Establishing these minimal expectations for hand hygiene opportunities allows for quantification rates of hand hygiene compliance among healthcare workers.

According to the WHO (n.d.), evidence shows that, based on patient population report on bad health outcome, the U.S. rates high in health care expenses related to improper hand

hygiene. The high prevalence of health-related infections caused by poor hand hygiene by health care staff is one aspect that has led to adverse health outcomes. Vermeil et al., (2019), encouraged health care staff to follow appropriate hand hygiene procedures and clean their hands before and after patient contact. Unfortunately, observing hygiene and the general practice of handwashing is an aspect many patients and health care providers have not long prioritized.

Theoretical Model

The aim of healthcare intervention should be to prevent infection among patients, staff, and even visitors. Hand washing is the single most effective way to prevent the transmission of diseases (Laird et al., 2017). A person's subjective norm and intentions may help direct their behavior (Gaube et al., 2021). When a healthcare worker thinks about washing their hands, it may be influenced by their own intentions or the social influence of such practices. The healthcare worker's attitude and the regulations established by the society can affect someone's objective. Healthcare worker's insight about hand hygiene and thinking regarding hand washing can be impacted by relatives, friends, and coworkers which can inspire them to practice hand hygiene. The social cognitive theory was used to guide this project to realize how people adopt and maintain various behavioral patterns. As depicted by Albert Bandura, social cognitive theory explains that people do not learn new behaviors just by succeeding or failing, but other people's actions determine human existence (Grace-Farfaglia, 2019). According to Gaube et al. (2021), a person's intention to clean their hands is the immediate antecedent for behavior. In social cognitive theory, there is a notion that people learn based on interconnection with people, surroundings, and behaviors.

Most hospitals have infection control procedures which include hand hygiene protocol. Proper hand hygiene practices impact patients' healthcare and promotes good hand hygiene

behaviors from staff and peers. Healthcare workers interest in hand hygiene is sometimes based on the “out of sight, out of mind” behavior. When there is a reinforcement for a good behavior, especially by the administration, people tend to be willing to do the right thing and others learn from imitating same positive outcome. The DNP project shows that a total of 33 participants for hand hygiene were observed. The data collected during the implementation shows that 19 participants indicated that hand hygiene education and practice was of very importance in hand hygiene compliance. Knowing and using CDC or WHO guidelines posted on the bathroom wall sinks may make it easier for healthcare workers to wash their hands more often and effectively.

Methodology

The direct healthcare workers underwent a quality improvement project and were observed washing hands in an inpatient psychiatric facility. During the implementation of this project, to meet JCAHO standards, these methods were used:

1. A hand hygiene recruitment script was used to recruit participants (Appendix A)
2. The Perception Survey for Health-Care Workers (PSHCW) was used for pre-and post-assessment to evaluate for their insight before and after education (WHO, n.d.).
3. Used the Centers for Disease Control and Prevention's (CDC) proper handwashing procedure ("Stop Germs! Wash Your Hands") to educate the direct health care workers on JCAHO compliance (CDC, 2021).
4. Applied Glow-germ on direct health care staff's hands and observed staff wash hands using soap and water.
5. UV blacklight was used for hand inspection.

The IRB (Appendix E) approved the project. The subjects were made aware that there would be a project with a recruitment flyer (Appendix A) posted at the staff office. The observation periods were distributed randomly during the day, afternoon, and night for two days. During implementation, a perception survey for pretest was administered among the direct healthcare workers after signing consent forms (Appendix B). After educating the staff with the CDC's hand hygiene flier, a posttest was given, and they were observed washing their hands using the CDC guidelines. Hand washing equipment was conveniently located where necessary in the facility.

An educational flyer was provided to the sample healthcare workers population to improve the future healthcare worker's understanding of proper handwashing techniques and compliance. The participants were asked to complete an education session and pre/posttest of the survey. The participants spent approximately thirty minutes to complete the educational session, surveys, and direct handwashing procedure.

Setting

This study took place in an inpatient psychiatric facility in Douglasville, Georgia. The facility is in a 1,200-acre wooded space outside of Atlanta and is home to residential treatment programs for children and youth 6 to 17 years of age with severe emotional and behavioral challenges. The facility offers a therapeutic environment that includes a lake, a sports field with a running track and playgrounds for recreational activities, hiking trails, canoeing activities, a ropes course, animal therapy enhanced treatment, and one of the region's first brain-based programs. The patients are organized into 10-12 member groups by gender, age, diagnosis, and functioning level. Student within the same group live attend classes, eat meals, and participate in activities together.

Population

The subjects were direct health care workers working in different units and courtyards of the hospital. The subjects include licensed practical nurses (LPN), registered nurses (RN), shift counselors, and night monitors (Appendix C). There were thirty-three participants who were either full time, part time or per diem staff.

Inclusion/Exclusion Criteria

The direct healthcare workers which include LPNs, RNs, counselors, and night monitors that were available during data collection and interested in participating in the study were included in this study. Indirect healthcare workers and individuals who did not wish to participate in the study were excluded.

Recruitment

The PI created a recruitment flyer and posted it at the staff office on February 1, 2022, for thirteen days, informing the staff of the hand hygiene education and implementation, and giving them the dates and place of performance. (Appendix A). Time was made very flexible to meet the staff schedule.

Consent

A consent form was created providing information on study goal and approach to assist staff with deciding whether to participate. The participants were to take part in this voluntary study for approximately two weeks (Appendix B).

Design

The PI presented and introduced information on hand hygiene practices using CDC's and WHO's guidelines that included categories 1A, 1B, and 1C (Table 1 and Table 2). For this

quality improvement project, a pre and post-test was conducted using WHO perception survey to evaluate the direct healthcare perception before and after. The IRB approved the implementation of the project (Appendix E and F), and the project started after the facility gave consent to implement. The project met JCAHO's standards for hand hygiene compliance purposes.

Risks and Benefits

There was minimum risk to those involved in the project. The highest risk was to confidentiality. However, confidentiality was password protected and stored in the facility's database and accessed by the facility's Managing Director of Data Sciences. There was possibility of the subjects having allergic reaction from the Glow-germ or soap.

The benefit of this study was to create an awareness and improve compliance in hand hygiene, especially during the recent pandemic. The education and hand hygiene practice tend to improve knowledge on compliance. CDC guidelines and WHO pre and post-test for evaluation were used during and after education. Good hand hygiene techniques were presented, including when and how to wash your hands.

Compensation

There was no special or financial compensation for subjects in this project. Participants were provided with the CDC's handouts and educational materials as part of study protocol for educating staff.

Timeline

The timeline for the implementation of the project occurred when the anticipated number of participants had been obtained. The project implementation was complete in a period of two days. For the project timeline (Table 4 and Table 5).

Budget and Resources

The cost of obtaining resources was self-funded. The cost estimate is essential in project implementation because it allows the facility and the PI to plan effectively. The PI budgeted resources to meet the number of participants willing to participate (Table 3).

Evaluation Plan

Survey and observation are two ways data were collected and evaluated during this project. The PI observed and monitored direct healthcare employees during the handwashing process to follow CDC's hand hygiene guidelines. The Perception Survey for Health-Care Workers was used for the pre-and post-assessment to assess their insight before and after education (WHO, n.d.). The Centers for Disease Control and Prevention's (CDC) proper handwashing procedure ("Stop Germs! Wash Your Hands") was the educational material for the direct health care workers. The CDC educational flyer also noted how to wash hands. The UV black light was used to gauge proper hand washing. The Glow-germ helped to measure how effectively the healthcare workers washed their hands. Washing hand with soap and water may remove more dirt from the skin than water alone. The napkins were used to wipe hands and turn of the sink to prevent re-contamination. The hand hygiene process was monitored by direct observation using CDC's and WHO's hand hygiene guidelines to improve hand hygiene compliance.

Statistic Considerations

The approach used in this project was intention-to-treat. Incomplete surveys were not excluded from the study since there were no optimal conditions or constraints in which exclusion of data would be necessary. Data collected through the survey showed that out of a sample size

of 33 respondents, 19 claimed that educational activities were important in developing hand hygiene practices. The question, “were the educational activities that you participated in important to improve your hand hygiene practices?” was the question that generated the answer with the highest mode of “very high importance” (Appendix D). The data collected helped to identify that supplementary education on hand hygiene procedures points to positive outcomes among respondents.

Data Maintenance and Security

The data will be secured in the facility’s database which is password protected with limited access by the Managing Director of Data Sciences. The data will be published in JSU’s repository. Data maintenance and security was explained to the participants (Appendix B).

Results

The project was a quality improvement study in an inpatient psychiatric facility in Douglasville, Georgia, where nurses, counselors, and night monitors work to care for children with behavioral health problems. The project was implemented in February 2022, and the subjects were direct health care workers working in different courtyards of the facility. The results of this project indicated that the inpatient psychiatric facility has data on hand hygiene that meets JCAHO's compliance (Appendix C and Appendix D).

Results of Observation

Upon the PI watching the participants perform hand hygiene, the subjects completed the handwashing process according to CDC guidelines. Guidelines for hand hygiene by the CDC were consistent with hand hygiene compliance practice recommendations, the basic principle of NPSG.07.01.01, and standard precautions that met JCAHO's compliant categories IA, IB, and IC (Table 1 and Table 2). The UV blacklight used for inspection revealed that although the proper

hand hygiene was performed, Glow-germ was visible on some healthcare workers' hands. The observation helped to verify the need for proper hand washing.

Results of Survey Responses

The result of WHO's perception survey pretest for the question "did you receive formal training in hand hygiene in the last three years?," generated a response of 67% of the participants said "yes" they have received formal training within the period (Appendix D). However, there was no documentation by the facility of such training.

The posttest or follow-up survey shows that when the healthcare workers were being observed, they were more attentive to hand hygiene. The result showed that when the participants were asked "were the educational activities that you participated in important to improve your hand hygiene practices?," 58% said that it is of "very high importance" to them (Appendix D).

Discussion

Hand hygiene practices using the CDC's guidelines is a measure to meet JCAHO compliance. There was not any data available to encourage hand washing. This project shows that the primary problem with hand hygiene compliance to meet JCAHO's standard categories IA, IB, and IC has been met (Table 1 and Table 2). One potential reason for poor handwashing compliance could be that the importance of this simple protocol to meet JCAHO compliance is routinely underestimated by direct healthcare workers. Many other reasons for non-compliance with hand hygiene guidelines may include different departments, lack of time, and heavy workload. A probable reason for the considerable compliance issues among the nurses could be because nurses, unlike other direct healthcare workers are at the forefront of patients care and are trained and required by profession to practice infection control measures.

Though not assessed during the project implementation, another potential barrier to handwashing for healthcare workers is skin irritation. Indeed, skin irritation may constitute a barrier to appropriate compliance with handwashing guidelines. Another potential barrier of increasing compliance with handwashing is the time required to complete it. Some healthcare workers might not wash their hands because they might regard it as a waste of time in caring for the patients. Hand hygiene practices using the CDC's guidelines is a measure to meet JCAHO compliance in the inpatient psychiatric facility. One other reason for poor handwashing compliance could be that the importance of this simple protocol to meet JCAHO compliance is routinely underestimated by direct healthcare workers. This project shows that the primary problem with hand hygiene compliance to meet JCAHO's standard categories IA, IB, and IC (Table 1 and Table 2) has been met.

Implications for Clinical Practice

Educating direct healthcare workers about the CDC hand hygiene guideline may increase awareness and help meet JCAHO compliance. The direct healthcare workers practicing hand hygiene based on JCAHO standards may protect the workers and patients from acquiring germs and help prevent infections.

Implications for Healthcare Policy

This project will provide data that meets JCAHO requirements for hand hygiene compliance among direct healthcare workers in the inpatient psychiatric facility. The facility now has baseline data that supports JCAHO requirements. Though the facility did not meet the current JCAHO standards, the education may motivate staff to improve their hand hygiene to avoid JCAHO's deficiencies in hand hygiene and allow for facility compliance in the future.

Implications for Quality/Safety

Cleaning your hands can prevent the spread of germs, including those resistant to antibiotics. In healthcare facilities, patients' safety is of utmost importance. Hand hygiene is a good indicator of safety and quality of care given to the patient and should be practiced often. In addition, the improvement in hand hygiene can help prevent healthcare-associated infections, increased cost to the healthcare system, and mortality.

Implications for Education

Compliance with hand hygiene should be an intuitive part of care and should become automatic behavior. Knowledge of hand hygiene was associated with hand hygiene compliance (CDC, 2018). Educating healthcare workers on hand hygiene refreshes their learning and increases the good hand hygiene process. Some healthcare workers believed they had adequate training until they engaged in the hand hygiene process and missed a step that might be detrimental to a patient.

Limitations

The project's primary limitation is that it only covers the direct healthcare workers at the inpatient psychiatric facility. The direct healthcare workers were LPNs, RNs, counselors, and night monitors. The sample size was 33 participants, but the response rate was 100%. There was a limitation in some departments and administration participation; for example, the study did not cover the executive directors hand hygiene participation. The project was limited to direct healthcare workers who were interested in participating in the project and signed the consent form. There was a limitation of time because the project was for a brief period, specifically for two days.

The long-term reliability could be an issue because even with CDC's posters on the facility walls, direct healthcare workers may still not practice hand hygiene. There was no limitation for loss to follow-up because the project was for two days, and each participant received the education and practiced hand washing same day. There was 0% loss because each participant followed-up accordingly, answered the WHO perception follow-up survey questions. The follow-up was uninterrupted and complete. The healthcare workers full time, part time or per diem status were not assessed for this study because it was not needed to achieve the expected outcome.

Dissemination

In disseminating the qualitative data of this project, flyers, and questionnaires were used to educate direct healthcare workers in an inpatient psychiatric facility. The information was presented after receiving consent (Appendix B) for participation from the staff. The DNP manuscript will be placed in the inpatient psychiatric facilities password protected database managed by the managing director of data science.. This project will play an essential role in helping the facility meet JCAHO compliance requirements. There will be dissemination of the manuscript and poster to my peers and the university faculty. Additionally, the manuscript will be placed in JSU's public repository.

Sustainability

Sustainability refers to locking in the progress made by an improvement initiative; spread occurs when best practices and knowledge about successful interventions are actively disseminated to every available care setting (Moran et al., 2017). The achievement of any program can be allocated to the pride in ownership felt by those implementing the daily tasks. Therefore, involving the direct healthcare staff will help create sustainable change in hand

hygiene practices through education for improved hand hygiene practices. An excellent strategy is to post CDC's education flyers on the wall over the sinks at the facility, especially in the bathrooms. Another approach is to encourage staff to continue to provide feedback on hand hygiene performance. Continued display and discussion of organizational hand hygiene compliance at safety and quality committee meetings and clinical leadership team meetings was recommended to raise awareness of hand hygiene practices. Direct supervision and monitoring are other strategies to monitor hand hygiene sustainability. The sustainability of hand hygiene among healthcare workers may rely on frequent training and education. The PI recommended annual in-service by the facility for hand hygiene education. A study that assessed different combinations of strategies recommended by the World Health Organization to improve hand hygiene compliance found that interventions that contain multiple strategies may improve hand hygiene compliance (Gould et al., 2017). For sustainability and compliance, education flyers were posted over the sink areas.

Plans for Future Scholarship

To ensure compliance with the hand hygiene practices, a comprehensive program needs to be put in place that will foster a culture of hand hygiene and monitor and provide monthly feedback to the leadership team. The leadership team will then distribute this information to their teams. In addition, the program will include the "Stop Germs! Wash Your Hands". These are the hand hygiene steps that all employees need to adapt to the health care facility standard:

- After using the bathroom
- Before, during, and after distributing food
- Before eating food
- Before and after caring for residents

- After blowing your nose, coughing, or sneezing
- After touching soiled items (CDC, 2017).

Awareness of the proper execution of the technique is critical to ensuring hand hygiene compliance and meeting JCAHO standards. All new hires should be required to attend a meeting on hand hygiene compliance policies as part of their orientation. In addition, all current staff members should be required to participate in an annual continued education meeting on hand hygiene compliance policies. Department leaders should hold the meeting, and attendance should be taken and submitted to the managing director of the data science or infection control department. All employees should receive hand hygiene leaflets in all new hire orientation packets and place them in all departments. Hand hygiene posters were hung the sinks after the project to maintain sustainability.

Conclusion

Noncompliance with handwashing is a substantial problem in a healthcare setting. From the responses indicated by the direct healthcare workers, it becomes evident that a behavioral change is required. Change involves a combination of education, motivation, and system change. The factors necessary for change include dissatisfaction with the current situation, the perception of alternatives, and the recognition, both at the individual and institutional level, of an individual's ability and potential to change. Interventions must target reasons for noncompliance at all levels of healthcare (i.e., individual, group, institution) to be effective. It is a required practice by the Joint Commission for all health care workers to follow hand hygiene standards. A hand hygiene program for the entire staff is crucial to reaching JCAHO's compliance standards. Hand Hygiene plays a significant role in reducing potential pathogens on one's hand. Staff

education is key to ensuring that all employees know and understand what is expected from them.

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Institutional Review Board Approval. This study was approved by Jacksonville State University's Institutional Review Board (Appendix E).

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Table 1

CDC Categories Definitions

Rank	Description
Category 1A	Strongly recommended for implementation and strongly supported by well-designed experimental, clinical, or epidemiologic studies.
Category 1B	Strongly recommended for implementation and supported by some experimental, clinical, or epidemiologic studies, and by a strong theoretical rationale.
Category 1C	Required by state or federal regulations. Because of state differences, readers should not assume that the absence of an *IC* recommendation implies the absence of state regulations.

(CDC, 2019)

Table 2

CDC Categories Recommendations

Categories	Recommendation
Category 1A	Hands should be washed with either a nonantimicrobial soap and water or an antimicrobial soap and water when hands are visibly dirty or visibly soiled with blood or body fluids.
Category 1B	Instructions be provided for performing hand hygiene. Wash hands before having direct contact with patients.
Category 1C	During the delivery of healthcare, to avoid unnecessary touching of surfaces to prevent both contamination of clean hands from environmental surfaces and transmission of pathogens from contaminated hands to surfaces.

(CDC, 2021)

Table 3

Budget and Resources

Activity Description	Cost
Printed flyers, consent forms, and surveys	$15
Glow-Germ	$11
UV Blacklight	$8.79
Hand soap	$4.62
Paper Napkin	$0
Total Cost	$58.41

Table 4

The Implementation Timeline

February 10, 2022	Read and signed consent forms by participants. Pretest on paper CDC's education flier-see methods Post-test on paper Hand hygiene process PI conducted the hand hygiene process
February 23, 2022	Read and signed consent forms by participants. Pretest CDC's education flier Post-test Hand hygiene process

Table 5

Project Timeline

Task	November	December	January	February	March	April
Preceptor search and meeting	X	X				
Recruitment of Participants			X	X		
Intervention. Evaluation. Toolkit				X	X	X
Post-test and analysis of outcomes						X
Results Presented to Preceptor						X

Appendix A

Hand hygiene project recruiting script

Hello, my name is Juliet Mkpuechina. I am a graduate student at Jacksonville State University in Jacksonville, Alabama. I am writing a project on hand hygiene compliance in an inpatient psychiatric facility, and I am inviting you to participate because you are a direct healthcare worker in an inpatient psychiatric facility.

This project aims to meet Joint Commission on Accreditation of Healthcare Organizations (JCAHO) hand hygiene compliance for the facility.

There has not been any current hand hygiene implementation data to direct care staff in the facility, according to the Joint Commission on Accreditation of Healthcare Organizations (JCAHO)

Participation in this project includes signing a consent form, taking a World Health Organization (WHO) perception survey for healthcare workers (Save Lives, clean your Hands), Centers for Disease Control and Prevention (CDC) hand hygiene education, and handwashing which will take approximately 30 minutes.

Please join your fellow healthcare workers at the Hospital Clinic in a 30-minute implementation to better understand hand hygiene and compliance.

Dates and Times: 2/10/2022 from 7am to 6PM
2/23/2022 from 7am to 7pm

If you have any questions or would like to participate in the project, I can be reached at *julietmn25@gmail.com*

Juliet Mkpuechina: Doctor of Nursing Practice Student

Thank You!

Appendix B

Jacksonville State University

Participant Consent Form

TITLE OF STUDY: Implementing Hand Hygiene Protocol for Direct Care Staff in an Inpatient Psychiatric Facility to Improve Hand Hygiene Compliance.

Care Setting

Principal Investigator: Juliet Mkpuechina, Family Nurse Practitioner (FNP)

This consent form is part of an informed consent process for a DNP student project, and it will provide information that will help you decide whether you wish to volunteer for this project. It will help you to understand what the study is about and what will happen during the project.

If you have questions at any time during the project, you should feel free to ask them and should expect to be given answers that you understand entirely.

After all your questions have been answered, you may complete the attached survey and participate in the educational session if you still wish to participate in the project.
You are not giving up any of your legal rights by volunteering for this research project.

Why is this project being done?
The purpose of the proposed Doctor of Nursing Practice (DNP) project is to improve direct healthcare workers education and knowledge base on proper hand hygiene and compliance, especially during Covid-19 pandemic. This project aims to evaluate the standard policy and procedure for the proper use of handwashing in the facility setting using evidence-based practices literature. The participant (s) will be required to voluntary participate in this study for approximately two weeks. An educational program will be re-elevated and delivered to the sample healthcare worker population to improve the future healthcare worker's understanding of proper handwashing techniques and compliance. The participant (s) will be asked to complete an education session, and pre/post questionnaires. The participant (s) will spend approximately thirty minutes to complete the educational session, surveys, and direct handwashing procedure.

What will you be asked to do if you take part in this research project?
The Principal Investigator (PI) will survey before attending an education session on a hand hygiene protocol to trial the direct healthcare staff. The educational/implementation session will be provided during staff lunch/break time and will last about 30 minutes. A posttest will be administered after the protocol have been implemented. You will be asked to complete a pre/post survey, read the educational material, and wash your hands. The intervention will use a black light and Glo Germ. Please notify the PI if you do not want to participate with the black light and Glo Germ. You have the option of just using soap and water.

What are the risks or discomforts you might experience if you take part in this project?
No expected harm can occur from participating in this study. This project has no influence or involvement from upper management, and participation is voluntary. Upper management will be excused from participation.

Participation in this project is of no cost to you.

How will information about you be kept private or confidential?
All efforts will be made to keep your personal information in your research record confidential, but total confidentiality cannot be guaranteed. Your information should be disclosed only with your permission or as required by law. Results of the project will be kept on the facility's record/EMR and access by the managing director of data sciences for the facility.

What will happen if you do not wish to participate in the project or if you later decide not to stay in the project?
Participation in this project is voluntary. Suppose you do not want to enter the project or decide to stop participating. You may choose not to participate, or you may change your mind at any time. In that case, your relationship with the study staff will not change, and you may do so without penalty and without loss of benefits to which you are otherwise entitled.

You may withdraw your consent for participation in this project, but you must do this in writing to Juliet Mkpuechina at jmkpuechina@stu.jsu.edu

Who can you call if you have any questions?
If you have any questions about taking part in this project you can call the principal investigator:

Juliet Mkpuechina, MSN, FNP-BC
Doctor of Nursing Practice Student
(770) 375-0452

AGREEMENT TO PARTICIPATE

1. Subject consent:

I have read this entire form, or it has been read to me, and I understand what has been discussed. All my questions about this form or this study have been answered. I agree to take part in this research study.

Subject Name:_____

Subject Signature:_____ Date:_____

2. Signature of Investigator/Individual Obtaining Consent:

To the best of my ability, I have explained and discussed the study's complete contents, including all the information contained in this consent form. All questions of the research subject and or legally authorized representative have been accurately answered.

Investigator/Person Obtaining Consent (printed name):_____

Signature:_____ Date: _____

Appendix C

Figure 1: Perception Survey for Health-Care Workers Results

1. **Participant #:** 33 total participants
2. **Date:** Survey implemented on 2/10/2022 and 2/23/2022
3. **Facility:** Inpatient Psychiatric Facility
4. **Service:** Residential treatment for children and youth with serious emotional and behavioral challenges
5. **Courtyard:** All
6. **City:** Douglasville, Georgia
7. **Country:** USA
8. **Gender:** Female=13 Male=20
9. **Age:** No Response
10. **Profession:** Licensed practical nurses (LPN), registered nurses (RN), shift counselors, and night monitors
11. **Department:** Other

12. **Did you receive formal training in hand hygiene in the last three years?**

No=11 Yes=22

13. **Do you routinely use an alcohol-based hand rub for hand hygiene?**

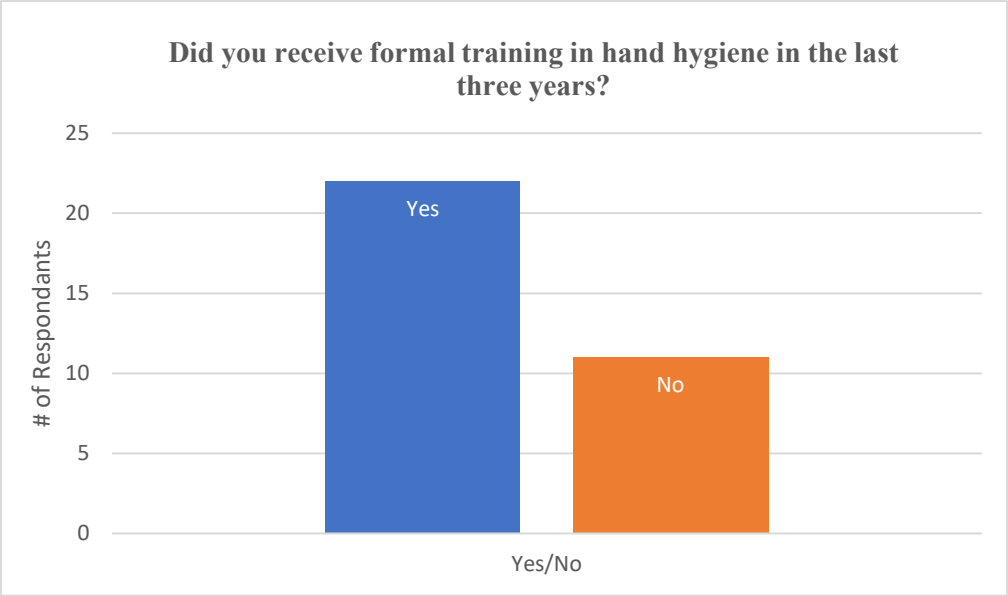
No=8 Yes=25

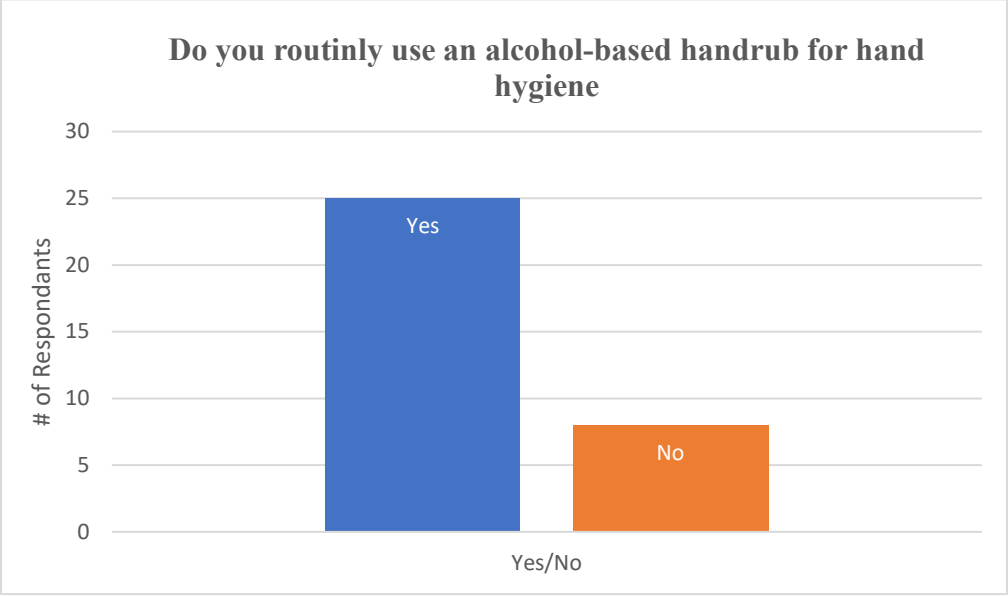
(WHO, 2017)

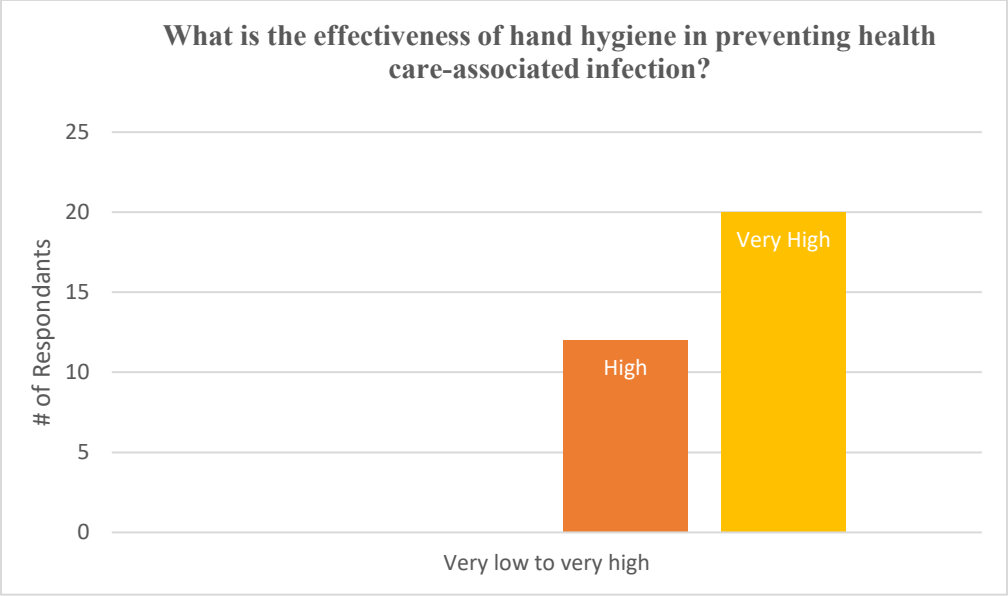
Appendix D

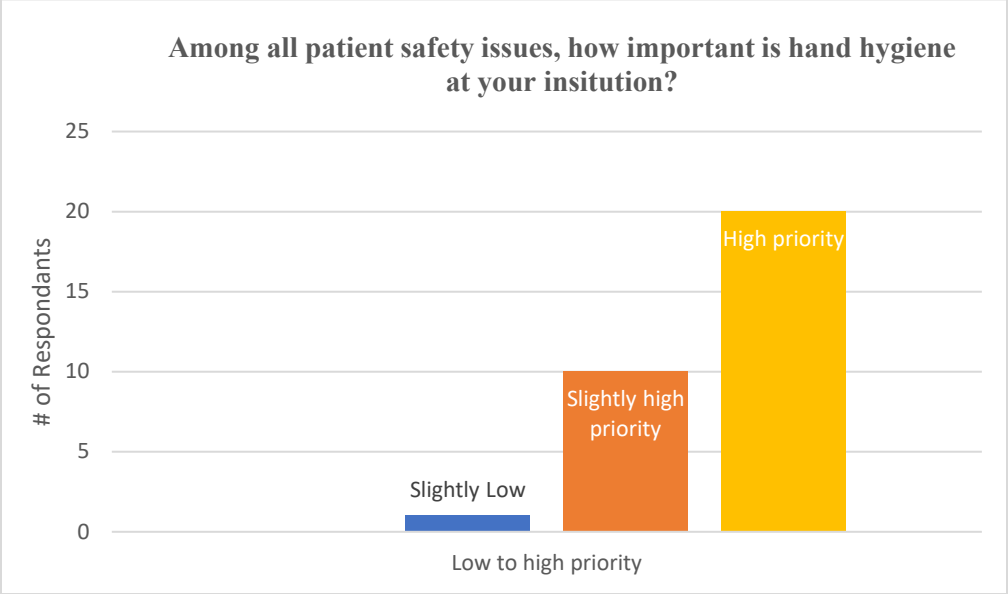
Bar Chart Results

Perception Survey for Health-Care Workers Results (Pretest)

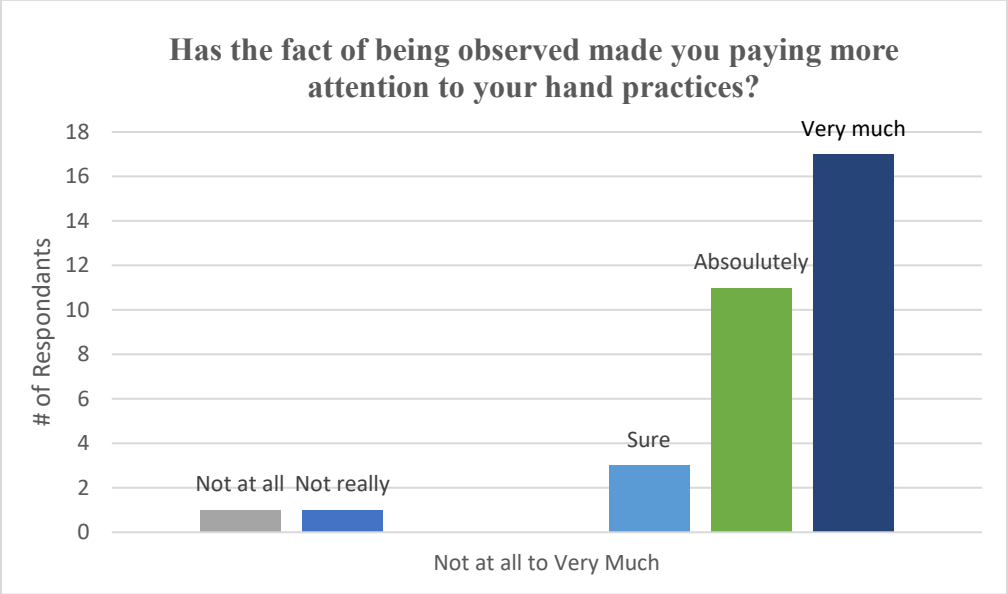


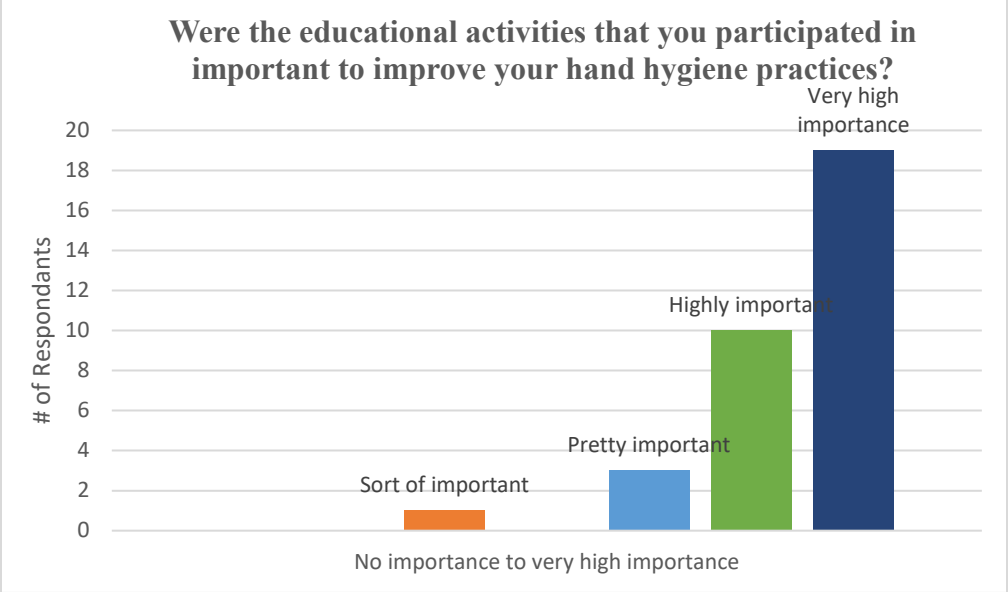


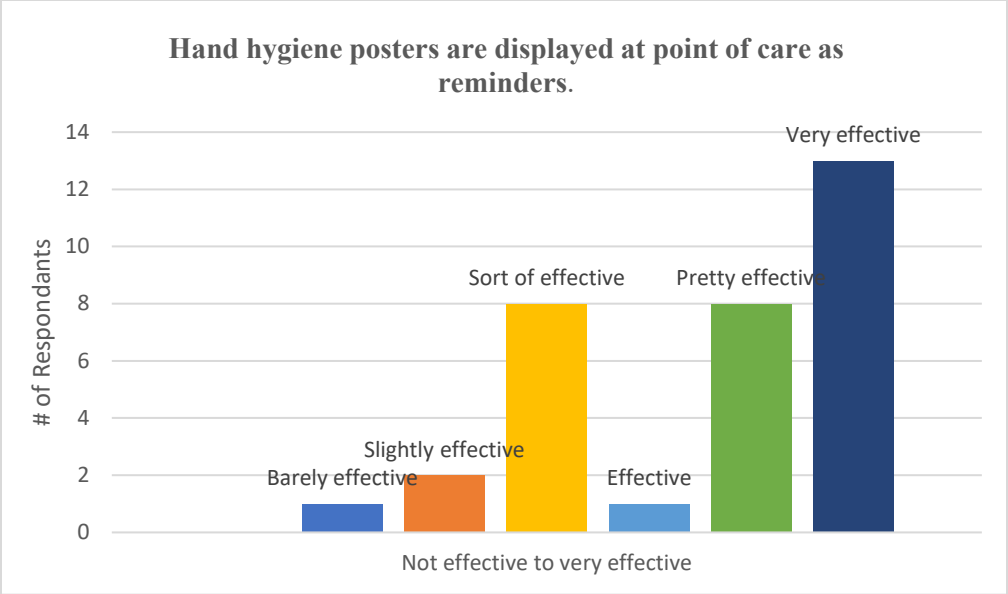

What is the effectiveness of hand hygiene in preventing health care-associated infection?
25
20
15
10
5
0
# of Respondants
High
Very High
Very low to very high

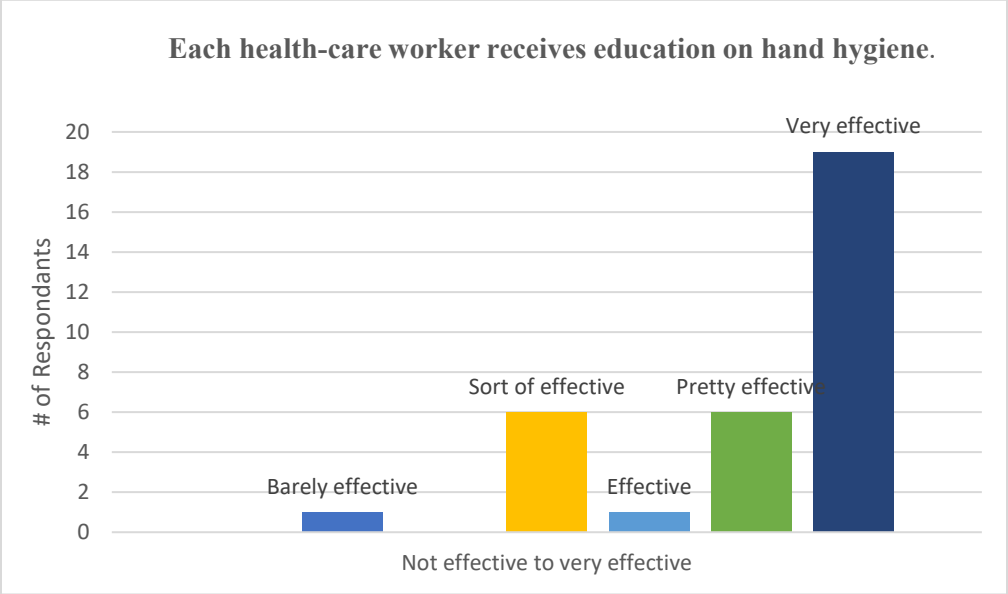

Among all patient safety issues, how important is hand hygiene at your insitution?
25
20
15
10
5
0
# of Respondants
Slightly Low
Slightly high priority
High priority
Low to high priority

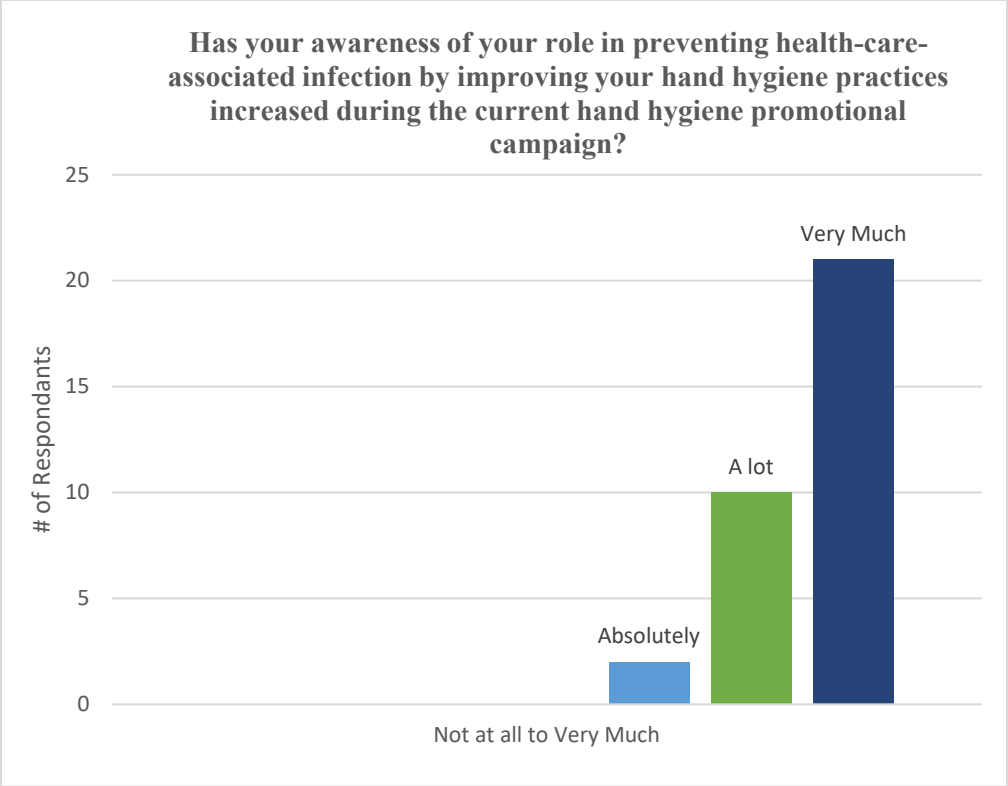
Follow-up Perception Survey for Health-Care Workers Results (Posttest)






Hand hygiene posters are displayed at point of care as reminders.
14
12
10
8
6
4
2
0
# of Respondants
Very effective
Sort of effective
Pretty effective
Slightly effective
Barely effective
Effective
Not effective to very effective


Each health-care worker receives education on hand hygiene.
20
18
16
14
12
10
8
6
4
2
0
# of Respondants
Very effective
Sort of effective
Pretty effective
Barely effective
Effective
Not effective to very effective


Has your awareness of your role in preventing health-care-associated infection by improving your hand hygiene practices increased during the current hand hygiene promotional campaign?
25
20
15
10
5
0
# of Respondants
Very Much
A lot
Absolutely
Not at all to Very Much

(WHO, n.d.)

Appendix E

JSU | INSTITUTIONAL REVIEW BOARD
JACKSONVILLE STATE UNIVERSITY

Institutional Review Board for the Protection of Human Subjects in Research
203 Angle Hall
700 Pelham Road North
Jacksonville, AL 36265-1602

December 6, 2021

Juliet Mkpuechina
Jacksonville State University
Jacksonville, AL 36265

Dear Juliet:

Your protocol for the project titled "Implementing Hand Hygiene Protocol for Direct Care Staff in an Inpatient Psychiatric Facility to Improve Hand Hygiene Compliance Care Setting" 12062021-02 has been granted exemption by the JSU Institutional Review Board for the Protection of Human Subjects in Research (IRB). If your research deviates from that listed in the protocol, please notify me immediately. One year from the date of this approval letter, please send me a progress report of your research project.

Best wishes for a successful research project.

Sincerely,

Lynn Garner
Associate Human Protections Administrator, Institutional Review Board

Appendix F

CITI PROGRAM

Completion Date 12-Sep-2021
Expiration Date 11-Sep-2024
Record ID 44744652

This is to certify that:

Juliet Mkpuechina

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

Social and Behavioral Responsible Conduct of Research
(Curriculum Group)
Social and Behavioral Responsible Conduct of Research
(Course Learner Group)
1 - RCR
(Stage)

Under requirements set by:

Jacksonville State University

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?waba9e8c7-5135-4a50-8625-4c7a961fdcd1-44744652