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“A MINUTE TO CLEAN IT”: COMPLIANCE TO HAND WASHING PRACTICE AMONG HEALTHCARE WORKERS IN ILIGAN CITY

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Abstract

Background: *Healthcare-associated infections are the most common adverse event in healthcare, resulting in a significant burden on patients, their families, and health care systems. Hand hygiene is the leading measure for preventing the spread of pathogens and reducing health care associated infections, but health care providers' adherence to recommended practices remains suboptimal in most settings, and (improvement) maintaining its standards is difficult to sustain.*

Objective: *This study attempts to explore the degree of compliance among nurses and nursing attendants in the strict implementation of the standards in hand washing practices.*

Methodology: *Quantitative-quasi-experimental design was used to measure their degree of compliance of proper hand hygiene. Using a questionnaire based on the World Health Organization's "My Five Moments of Hand Hygiene". Convenience sampling was used in choosing 50 nurses and nursing attendants in selected wards of a hospital in Iligan City. Weighted Mean and Spearman-Rank Correlation was used as statistical tool. The data was encoded for analysis using the IBM-SPSS version 20 software.*

Result: *This study showed that out of the five moments of hand hygiene, (After Body Fluid Exposure Risk Moment) was the most practiced moment of hand washing. This is followed by the (After Touching the Patient Moment). The (Before Clean/ Aseptic Procedure Moment) and (After Touching Patient Surrounding Moment) was tied on third place. Only the (Before Touching a Patient Moment) fell into the "frequently" parameter. The study implies that the respondents were usually compliant to hand washing practices. Strict monitoring and implementation of hand washing protocol must be constantly observed.*

Keywords

Hand Hygiene, Hand Washing, Five Moments of Hand Hygiene

1. Introduction

Healthcare-associated infections are the most common adverse event in health care, resulting in a significant burden on patients, their families, and health care systems (Allegranzi, B., et. al, 2011). In addition, every time a patient is treated for a healthcare-associated infection, the opportunity for microorganisms to develop resistance to antimicrobial drugs increases. The increasing incidence of multi-drug resistant organisms and emerging infections such as the Ebola virus disease continue to heighten the need for every possible measure in controlling the spread of infectious diseases. Hand hygiene is the leading measure for preventing the spread of pathogens and reducing health care associated infections, but health care providers' adherence to recommended practices remains suboptimal in most settings, and improvement is difficult to sustain (Tai, W. M. J., 2011). Barriers to hand hygiene are highly complex and multifactorial,

influenced by elements at both the organizational and individual levels (Jeffcott, S. A., et. al, 2009). Common barriers at the organizational level include inadequate hand hygiene facilities and workplace climates that do not value or emphasize the importance of hand hygiene. At the individual level, habits developed early in life and a lack of knowledge combined with misconceptions about hand hygiene during the delivery of care produce barriers to appropriate practice. While single one-time interventions that do not address the multiple barriers have been unsuccessful in sustaining improvements on hand hygiene practices, ongoing multimodal programs have been more effective (WHO, 2009). Key elements of successful programs include system change within the organization, combined with ongoing education, and assessment and performance feedback to healthcare providers.

Hand hygiene is now regarded as one of the most important elements of infection control activities. In the wake of the growing burden of healthcare-associated infections and the increasing severity of illness and complexity of treatment superimposed by multi-drug resistant pathogen infections, health care practitioners are reverting back to the basics of infection preventions through simple measures like hand hygiene. Enough scientific evidence supports the observation that if properly implemented, hand hygiene alone can significantly reduce the risk of cross-transmission of infections in healthcare facilities (Anargh, V., et. al, 2013). Compliance is a challenge, however. While it is well known that proper hand hygiene practices are the most effective method of reducing hospital-acquired infections, the rate with which health care workers comply with best practice recommendations is still only approximately 40% (Yassi A. et. al, 2004). Low compliance is one reason that 5–10% of patients admitted into hospitals acquire at least one healthcare-associated infection (WHO Guidelines on Hand Hygiene in Health Care, 2009).

2. Related Literature

Healthcare workers should be compliant in adhering with proper hand hygiene before seeing patients, after contact with bodily fluids, before invasive procedures, and after removing gloves (CDC, 2011). On the new updates by the World Health Organization, five key moments of hand hygiene was introduced, which includes 1) before patient contact, 2) before an aseptic procedure, 3) after bodily fluid exposure risk, 4) after patient contact, and 5) after contact with patient surroundings. WHO recommends using a validated methodology for training observers to directly monitor hand hygiene practices using “My five moments for hand hygiene”. A multimodal strategy was found to be necessary to improve compliance; therefore, recommendations for proper hand hygiene span different levels. For providers, washing hands when visibly dirty, and using alcohol-based hand rub before and after contact with a patient,

contaminated surface, or medicine is critical. Additionally, they should not wear artificial nails. Organizations should provide information to workers regarding hand hygiene practices that reduce skin irritation and provide lotions or creams to minimize the occurrence of skin irritation (*WHO, 2011*).

3. Materials and Methods

Design: The researchers used the quantitative type of research, particularly the quasi-experimental design. A survey on the degree of compliance in the strict implementation of hand washing practices among nurses and nursing attendants working in selected fields of Gregorio T. Lluch Memorial Hospital was made.

Setting: The study was conducted at Gregorio T. Lluch Memorial Hospital (GTLMH) in Iligan City. GTLMH is a city-owned tertiary hospital with 119-bed capacity, occupancy rate of 126% daily, and the only licensed government hospital located in Iligan City. It has four (4) wards available to in-patients. These are Surgery ward, Medicine ward, Pediatrics ward, and the OB ward.

Population: The sample used for this study consisted mainly of fifty (50) participants who were nurses and nursing attendants. The respondents were selected using convenience sampling. The number of respondents from each selected area was proportional to the number of nurses and nursing attendants present and working the area during three (3) shifts.

Methodology: There were two sets of questionnaires used for the study. First, the researchers used WHO'S standardized questionnaire to evaluate the hand hygiene knowledge of healthcare workers, particularly the nurses and nursing attendants about healthcare-associated infections. Demographic profiles of the respondents were also included in the hand hygiene knowledge questionnaire. The second questionnaire was used in assessing healthcare workers' adherence/compliance to hand hygiene in relation to WHO's "My Five Moments of Hand Hygiene". The survey was designed to elicit quantitative data about healthcare workers' hand hygiene knowledge and adherence.

Statistical Analysis: Data collected were analyzed using the following statistical tools: frequency, percentage, weighted mean, Spearman correlation coefficient, point bi-serial correlation coefficient, Cramer's contingency coefficient

4. Results

Table 1: Did you receive formal training in hand hygiene in the last three years?

Did you receive formal training in hand hygiene in the last three years?		
	Frequency	Percentage (%)
Yes	39	78.0
No	11	22.0
Total	50	100

Table shows that 39 (78%) of the respondents claimed that they have received formal training in hand hygiene in the last 3 years and 11 (22%) did not. As a healthcare provider, one should have the knowledge about the proper hand washing techniques. Hand washing is considered as the first line of defense from different infectious microorganisms.

Table 2: Do you routinely use an alcohol-based hand rub for hand hygiene?

Do you routinely use an alcohol-based hand rub for hand hygiene?		
	Frequency	Percentage (%)
Yes	40	80.0
No	10	20.0
Total	50	100.0

Most of the respondents claimed that they have routinely used alcohol-based hand rubs for hand hygiene rather than hand washing with soap and water.

Table 3: Healthcare worker's adherence in accordance to My Five Moments of Hand Hygiene (Specified Items)

1. BEFORE TOUCHING THE PATIENT		
	Weighted Mean	Meaning
1.a Before Shaking Hand	2.36	Frequently
1.b Before assisting a patient in personal care activities to move, to take a bath, to get dressed.	1.69	Usually
1.c Before delivering care and other non-invasive treatment: applying oxygen mask, giving a massage;	1.82	Frequently
1.d Before performing a physical non-invasive examination: taking pulse, blood pressure, chest auscultation, recording ECG	1.72	Usually
Overall Weighted Mean	1.89	FREQUENTLY
2. BEFORE CLEAN/ ASEPTIC PROCEDURE		
	Weighted Mean	Meaning
2.a Before brushing the patient teeth instilling eye drops, performing a digital vaginal or rectal examination, examining mouth, nose, ear with or without instrument, inserting suppository / pessary / suctioning mucosa.	1.53	Usually
2.b Before dressing wound with or without instrument, applying ointment on	1.57	Usually

vesicle, making a percutaneous injection/puncture		
2.c Before inserting an invasive medical device 9 nasal cannula, nasogastric tube, endotracheal tube, urinary probe percutaneous catheter, drainage	1.57	Usually
2.d Before preparing a food, medication, pharmaceutical product, sterile material	1.56	Usually
Overall Weighted Mean	1.57	USUALLY
3. AFTER BODY FLUID EXPOSURE RISK		
	Weighted Mean	Meaning
3.a When the contact with mucous membrane and with not intact skin ends	1.41	Usually
3.b After per cutaneous injection or puncture, after inserting an invasive medical device (vascular access, catheter tube, drains etc.)	1.41	Usually
3.c After disrupting and opening an invasive circuit	1.46	Usually
3.d After removing an invasive medical device	1.41	Usually
3.e After removing an any form of marital offering protection (napkin, dressing, gauze, sanitary towel etc.	1.38	Usually
3.f After handling a sample containing organic matter, after cleaning any contaminated surface and soiled material (soiled bed linen, denture, instrument, urinal, bed pan lavatories etc.)	1.52	Usually
Overall Weighted Mean	1.43	USUALLY
4. AFTER TOUCHING THE PATIENT		
	Weighted Mean	Meaning
4.a Before shaking hand	1.84	Frequently
4.b After assisting a patient in personal care activates to move, to take a bath, to get dressed	1.57	Usually
4.c After delivering care and other non-invasive treatment: changing bed linen as the patient is in applying oxygen mask, giving massage	1.57	Usually
4.d After performing physical non-invasive examination: taking pulse, blood pressure, chest auscultation, recording ECG	1.69	Usually
Overall Weighted Mean	1.67	USUALLY
5. AFTER TOUCHING PATIENT SURROUNDING		
	Weighted Mean	Meaning
5.a After an activity involving physical contact with patient immediate environment: changing bed linen with the patient out of the bed. Holding a bed trail, clearing a bed table	1.56	Usually
5.b After a care activity: adjusting perfusion speed, clearing a monitoring alarm	1.63	Usually
5.c After other contact with surface or inanimate objects: leaning against a bed, leaning against a night table/ beside table.	1.51	Usually

Overall Weighted Mean	1.57	USUALLY
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The overall weighted mean on the first moment of hand hygiene, “*Before Touching a Patient*”, is 1.89, which is the highest weighted mean and fell under the scale parameter of “Frequently”. According to the results, the healthcare workers are 76% compliant/adherent to this practice.

Among the respondents, the second moment (Before Clean/ Aseptic Procedure), produced a weighted mean of 1.57 and fell under the scale parameter “Usually”. This shows that 51-75% respondents of this study were compliant/ adherent in performing hand washing before aseptic procedures.

The third moment (After Body Fluid Exposure Risk) produced a weighted mean of 1.43 and fell under the scale parameter “Usually”. Under the third moment, most of the procedures usually are invasive; therefore it requires strict hand washing.

With the fourth moment (After Touching the Patient), the weighted mean is 1.67 that fell under the scale parameter “Usually”.

Lastly, the fifth moment (After Touching Patient Surrounding) produced a weighted mean of 1.57 that fell under the scale parameter “Usually”.

Table 4: Healthcare worker’s adherence in accordance to My Five Moments of Hand Hygiene

Five Moments	Overall Weighted Mean	Meaning
1. BEFORE TOUCHING A PATIENT	1.89	Frequently
2. BEFORE CLEAN/ ASEPTIC PROCEDURE	1.57	Usually
3. AFTER BODY FLUID EXPOSURE RISK	1.43	Usually
4. AFTER TOUCHING THE PATIENT	1.67	Usually
5. AFTER TOUCHING PATIENT SURROUNDING	1.57	Usually
Overall Weighted Mean	1.626	USUALLY

SCALE PARAMETER:

- 1.00-1.79 USUALLY (76% above)
- 1.80-2.59 FREQUENTLY (51-75%)
- 2.60-3.39 OCCASIONALLY (26-50%)
- 3.40-4.19 RARELY (1-25%)
- 4.20-5.00 NEVER (0)

According to the scale parameters, the higher the weighted mean the lower the healthcare workers’ compliance and vice versa. Table shows that the first moment of hand hygiene (before

touching a patient) has the highest weighted mean among the five moments. The weighted mean is 1.89 which fell under the scale parameter “Frequently”. The first moment is composed of different non-invasive procedures. Therefore, most of the healthcare workers are frequently doing hand washing prior to performing a non-invasive procedure.

On the third moment of hand hygiene (after body fluid exposure risk), the results show that it has the lowest weighted mean that fell under the scale parameter “Usually”. The specified items on the third moment were classified as invasive procedures. Therefore, prior to performing invasive procedures, hand washing is highly and strictly recommended in order protect healthcare workers from the healthcare environment and from the patient’s harmful germs.

The researchers concluded that, after thorough analysis of data, the respondents were usually compliant to hand washing practices in accordance to the WHO’s “My Five Moments of Hand Hygiene”.

5. Conclusion

Having frequent training regarding hand washing might be the huge factor that increases compliance to hand washing among health workers. Others claim that sometimes they run out of hand hygiene supplies which deter them from completely following the 5 moments of hand hygiene.

It is recommended for the hospital to improve healthcare facilities especially on providing accessible sinks and hand hygiene supplies (i.e., hand sanitizers, alcohols, soap, gloves, proper sewerage system) and permanent sources of water in every area/ward of the hospital. Healthcare administrators and supervisors should monitor healthcare workers’ hand hygiene adherence in accordance to WHO’s “My Five Moments of Hand Hygiene.

Healthcare workers should receive hand hygiene training. They should educate the clients about the advantages and disadvantages of hand washing. In addition, they should instruct patients’ significant others/watchers to take responsibilities in cleaning their belongings, especially those related to bedside care, in maintaining cleanliness of the hospital environment.

The scope of the study is limited to hygiene practices by healthcare workers in Gregorio T. Lluch Memorial Hospital at Palao, Iligan City. The study is only limited to the exploration of the degree of compliance/adherence among nurses and nursing attendants in the strict implementation of hand washing practices. The study also intends to evaluate the hand hygiene knowledge among nurses and nursing attendants in healthcare-associated infections.

The researcher recommend for the Department of Health to include media partnership to broadcast advertisements that present the importance of hand washing, not just for healthcare providers and clients, but also for the general population. They should also begin the strict

implementation of protocol in the prioritization of hand washing before and after patient care to every hospital within the country.

Future researchers could use a larger sample of respondents. They could also include more types of respondents, such as doctors, affiliating students, and other healthcare workers. In future studies, identification of the specific factors that affects the degree of compliance to hand washing practice among healthcare workers could be considered.

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