



PRUDENT APPROACH OF FIVE MOMENT HAND HYGIENE INCREASE COMPLIANCY CAPACITY AND BEHAVIOUR CHANGE

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Abstract

The researcher explored the dynamic relationship between accessibility of medicines and the health systems building blocks by establishing the cultural factors that influenced demand and utilization of essential drugs to the marginalized in Tana River County. This cross-sectional descriptive survey selected 283 respondents by lottery approach simple random sampling across 27 villages in Tana River County and 30 health providers both in government and non-governmental owned dispensing health facilities. Culture (taboo) had an effect on the use of certain essential medicines among 133 (47%) of the respondents. Health-seeking behavior among minority 43 (15%) was determined by the head of the family. Predictions on the population indicated >23% chance that culture had an effect on acceptability and utilization of essential medicines. $r_s(283) = 0.604, p < 0.001$. To improve on demand for essential medicines, socio-cultural behavior change and communication strategies should be in use targeting improved acceptability of essential medicines.

INTRODUCTION

Hospital acquired infection is the main issue on all sides, to the patients, staff and organizations. It's contributes to the increases of hospital stay, prolong disability, increase resistance in microorganism toward antibiotic, financially effected and the mortality. It has been reported in United States that, every 1 in 25 hospitalized patients develop a Hospital Acquired Infection which incurred medical cost, pain, suffering and even mortality, Centre for Disease Control (CDC), (2012).

Patient care is provided in facilities which range from highly equipped and technologically advanced hospitals to front-line units with only basic facilities. Despite progress in public health and hospital care, infections continue to develop in hospitalized patients, and may also affect hospital staff. Many factors promote infection among hospitalized patients: decreased immunity among patients; the increasing variety of medical procedures and invasive techniques creating potential routes of infection; and the transmission of drug-resistant bacteria among crowded hospital populations, where poor infection control practices may facilitate transmission.

The most frequent nosocomial infections are infections of surgical wounds, urinary tract infections and lower respiratory tract infections. The WHO (2009) study and others have also shown that the highest prevalence of nosocomial infections occurs in intensive care units and in acute surgical and orthopaedic wards. Infection rates are higher among patients with increased susceptibility because of old age, underlying disease, or chemotherapy.

The health care worker's hands are the main contributor for the transmission of those pathogen to patient and within healthcare environment (Allegranzi and Pittet, 2009; Allegranzi, 2010; Istenes *et al.*, 2013). WHO (2009) recommended, the most convenient and simplest way to avoid infection is by hand hygiene (Shinde and Mohite, 2014; Huis *et al.*, 2011; Lam, Lee, and Lau, 2004; D Pittet, 2004). Many researchers agreed, (Alsubaie *et al.*, 2013; Nair *et al.*, 2014; Novoa *et al.*, 2007a; Squires *et al.*, 2013), hand hygiene is the most effective way to prevent transmission of infection and remain as a gold standard of practice (Pincock *et al.*, 2012, Boyce, 2011; Gould, Drey, and Creedon, 2011; Jumaa, 2005;).

Re enforcement of hand hygiene had been attempted with various strategies to reduce the hospital infection rate, but their compliance of hand hygiene still remains low in most hospital settings. (Allegranzi and Pittet, (2009) ; Mani, *et al.*, (2010); Jumaa, (2005).

One of the latest methods, simple, fast and effective about hand hygiene is called the 5 moment hand hygiene. The newly developed Five Moments for Hand Hygiene has emerged WHO (2009). The guidelines on Hand Hygiene provided to add value to any hand hygiene improvement strategy. This evidence-based, field-tested, user-centred approach is designed to be easy to learn, logical and applicable in a wide range of settings. This approach recommends health-care workers to clean their hands:

1. before touching a patient,
2. before clean/aseptic procedures,
3. after body fluid exposure/risk,
4. after touching a patient, and
5. after touching patient surroundings.

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The purpose of this study was to inculcate a practice of Five moment hand hygiene as routine among a specific group of low compliance of hand hygiene in KPJ hospitals

Background

The intended specific group of hospital staff in this study was meant to be the clinicians. Patient safety goals were introduced in year 2007 in KPJ group of hospitals. It was adopted from International Patients Safety Goals and consists of 6 patient safety goals. Hand hygiene was one element in the patient safety goals and five moments of hand hygiene was included as the major initiative of the safety goal. It was a mandatory implementation for all KJP Hospitals.

An audit report conducted in October 2013 at KPJ Kajang Specialist Hospital for the compliance of hand hygiene practice among staff; the clinicians, nurses and other health care provider. The results on compliance revealed; only 62% from the clinicians, 90% from the nurses and 76% from other health care providers. The compliance rate obtained from the clinicians was much lower than the standard suggested by WHO acceptance policy at 75%. Many studies supported the findings of poor compliance of hand hygiene among clinicians and other health care providers in the hospitals due to various reasons of unsatisfactorily compliance (Erasmus et al., 2010, Allegranzi and Pittet, 2009; Jamal et al. 2012; Rome et al. 2007; Yawson and Hesse, 2013).

Whitby et al., (2007), had identified the dynamics of behavioural change in compliance rate, requires clarifying and behavioural determinants. Fuller et al., (2014) discovered the noncompliance attitude on hand hygiene has great link with 3 behavioural domains; memory/attention/decision making, knowledge and environmental context /resources.

According to Pittet.D (2004), whom performed a quantitative study among physicians and found that observed physician adherence was mainly predicted by variables related to the environmental context, to social pressure and the perceived risk of cross-transmission, and to a positive individual attitude toward hand hygiene. They need more social control to improve their hand hygiene behaviour and some Physician suggested the senior nurses to perform this task but it remains unclear who should provide this control.

Squires et al., (2013) said, to obtain a better understanding of the barriers and enablers for low compliance specifically the physicians and the hand hygiene, required to look at the environmental context, social control and the perceived risk of cross-transmission. Mathai, (2010) believed designing a proper program of social cognitive model improved change of behaviour. Kim et al., (2103) Whitby & Ross, (2008) agreed with a structured promotion programme

that build up the knowledge and perception thus improve compliance on hand hygiene practice. Mayer et al., (2011), believed in building up, continuous and persistent implementation of bundle of intervention such as Alcohol hand rub, education, ongoing audit and feedback increased the compliance rate was increased up to 80%. Jenner et al., (2004) also agreed on activity of giving information as poster of hand hygiene campaign can be persuasive and persistent messages with intention to make a change in attitude and behaviour towards effectiveness of hand hygiene practice.

The major preventive effort should be focused in hospitals and other health care facilities Risk prevention for patients and staff is a concern of everyone in the facility, and must be supported at the level of senior administration. A yearly work plan to assess and promote good health care, appropriate isolation, sterilization, and other practices, staff training, and epidemiological surveillance should be developed. Hospitals must provide sufficient resources to support this programme (WHO, 2009).

METHODOLOGY AND METHODOLOGY

This is a quasi-experimental study to determine the compliance of the clinicians on five moments of hand hygiene. The self-assessment questionnaires based on level of perception of the clinician as respondents and the compliancy rate towards five moments of hand hygiene practice.

Sample

The total population of this study was 17. They were the clinicians of KPJ Kajang Specialist Hospital who managed patients in the Medical and Surgical wards. The total population was also the total respondents of the study.

Setting

The study was conducted in KPJ Kajang Hospital with 132 beds with bed occupancy rate of 80%. It consists of various specialities such as Orthopaedic, General Surgery, Medicine, Obstetrics and Gynaecology, Paediatric, Urology, ENT (Ear, Nose and Throat), Cardiology and Nephrology

Instrumentation: Four categories of instrument were used to obtain the data at various perspectives of the objectives of the study.

1. Self-assessment questionnaires on perception
2. Observational checklist
3. Intervention strategies using WHO tool kit

Data Collections

This study consisted of two phases. The first phase was the pretest on knowledge and perceptions of respondents on five moments hand hygiene

The second phase was the implementation and persuasion of Hand Hygiene after the comprehensive engagements and activities implemented. The following activities were;

1. Information giving
2. One to one coaching
3. Giving Awareness
4. Provision of hygiene facilities
5. Whisper campaign

The First Process

Campaign “hand rub weeks”

The hand hygiene campaign was conducted at KPJ Kajang Hospital from 1st May, 2014 Till 14 May, 2014 conducted continuously for 2 weeks with various related activities conducted. The campaign was held in order to increase the clinicians, other health care providers, patients and community's awareness on the hand hygiene practice. A collaborative effort with Infection Control team and vendor resulted in the success of the outcomes.

The first stage was, putting up signage and in all the wards and at also all floors for assesses ability of information and knowledge to all staff and the clinicians and forgetting the public.

Followed by the availability of hand hygiene facilities such as, clinical sinks were stationed for use especially in the treatment room, along corridor pathway, medication room, and next to the Nurse's counter.

The Alcohol hand rub dispensers were placed outside in between the two rooms, each patient's room and available every round or procedure trolley where the clinicians could reach them. An approval was obtained from management for installation of additional hand rub dispenser for every round trolley, procedure trolley and each of patients' bed side.

The third stage of the hand hygiene campaign was on Continuous Medical Education (CME). It was conducted in series for the 17 respondents. Again with collaborative effort from the Infection Control Team, experts and vendors from respective areas of infection controls were invited as speakers to deliver the messages. Relevant topics related Infection Control practices such as five moments of hand hygiene, Antibigram Report. Hands-on techniques of hand hygiene were delivered on rotation basis depending on the availability of the clinicians.

Another awareness session was performed as knowledge giving session on the hand hygiene. It was conducted through “fun” like strategy, such as Quiz and competitions. At the end of session, participants were rewarded to those received appropriate answers. The

participants were mainly the other health care providers.

The Second Process

After 2 weeks of the campaign carried out, the researchers gave three months duration to the clinician's (respondents) to develop the transformation to take place, while the posters, the facilities and the link nurse played the major role of reminder as the retention strategies.

The link nurse will perform an additional reinforcement of five moment hand hygiene practice to all respondents. It was a unique approach called, whisper campaign or soft reminder performed to the clinicians who forgot to perform the five moments hand hygiene during work. The aim was to remind the respondents on hand hygiene in a casual and gentle manner, not embarrassing in public. This approach had been recommended (Maskerine & Loeb, 2006) in order to transform the attitude of noncompliance towards hand hygiene practice.

At the same time, the link nurse and the researcher will make an observations on the number of Five moments hand hygiene performed by every individual clinician at each time he/she came to see their patients including performing procedures. In this study, the number of performing hand hygiene was regard as the ‘opportunity’. Although the number of sample was 17, but the opportunities of performing hand hygiene were the main concerned.

Collection of data

Observational checklist

Clinicians were given approximately 3 months to get acquaintance to the five moments of hand hygiene to be transformed into actual practice and habits. A trained Infection Control Link Nurses who had undergone training on the five moments hand hygiene technique, were assigned to observe the hand hygiene opportunity performed by the clinicians at stipulated time randomization for compliance

Self-assessment questionnaires on perception

Seven questionnaires in the form of 7 points Likert scale ranging from not effective to very effective, not important to very high important and no effort to a big effort. Another 4 questions used a measurement scale on 4- point Likert scale focused on low priority to very high priority to determine the perception on the important of hand hygiene practice.

Data Analysis

SPSS version 21st used to analyse data. All data were analysed interpreted and organised according to

objective and variables. Data distributed in frequency tables in the form of bar chart, percentage and p-value for association.

Table 1 Self- assessment questionnaires on perception

S/n	Statement on perception	P-value
1.	An average of hospitalized patient may develop a Hospital Acquired Infection.	0.001
2.	Impact of HAI on patient's clinical outcome.	0.000
3.	The effectiveness of hand hygiene in preventing hospital-associated infection.	0.007
4.	Important of hand hygiene as one of patient safety at institution.	0.020
5.	Average percentage of situations requiring hand hygiene to do healthcare workers in your hospital actually perform hand hygiene, either by hand rubbing or hand washing (between 0 and 100%).	0.001

Table 2 Perception on hand hygiene action

6	Action that improved hand hygiene permanently in institution.	P-value
6a.	Leaders and senior managers at your institution support and openly promote hand hygiene.	0.119
6b.	The healthcare facility makes alcohol-based hand rub always available at each point of care.	0.172
6c.	Hand hygiene posters are displayed at the point of care as reminders	0.016
6d.	Each healthcare worker receives education on hand hygiene	0.014
6e.	Clear and simple instructions for hand hygiene are made visible for every healthcare worker.	0.043
6f.	Healthcare workers regularly receive feedback on their hand hygiene performance	0.016
6g.	You always perform hand hygiene as recommended (being a good example for your colleagues).	0.011
6h.	Patients are invited to remind healthcare workers to perform hand hygiene.	0.002

Table 3 The important role in performed optimal hand hygiene

S/n	Statement on perception	P-value
7.	The importance of the head of your department attach to the fact that you perform optimal hand hygiene	0.005
8.	The importance of your colleagues attach to the fact that you perform optimal hand hygiene.	0.001
9.	The importance of patients attach to the fact that you perform optimal hand hygiene.	0.001
10.	Average percentage of situation that required hand hygiene (hand washing or Hand rubbing)	0.021

Table 4 Overall compliance rate on five moments of hand hygiene through observation strategy

Hand hygiene action	The opportunity to perform hand hygiene (n=342)
Hand rub	220 (64.3%)
Hand wash	45 (13.1%)
Missing	77 (22.5%)

DISCUSSION

The overall finding showed a significant increase in term of compliance with 5 moments of hand hygiene practice. But clinicians still remained low compliance in moments of before contact the patient and after touch patient surrounding.

The study revealed the clinicians' low compliance towards the moments before contact patient after contact patient surrounding is contradict with their perception result achieved earlier. Though the clinicians do have a good perception, but it didn't change their practice because most of the clinicians reluctant to change their behaviour toward hand hygiene practice. Even if ones is aware on the evidence and willing to change but it is difficult for them to change their established practice, Godin et al.,(2008)

Clinicians need to change the habit to a good practice and develop a patient safety culture. Despite of high quality care render to patient, it also gives a good reputation for the organisation in long run as a potential benefit. The important of ongoing enforcement strategies have to be implemented onto clinician's in ensuring the compliance of 5 moments of hand hygiene sustained.

Their perception towards 5 moments of hand hygiene practice was also very high. Most of the clinicians were aware of the impact if they did not adhere to the hand hygiene practice towards their patient and hospital as well. Result in the perception showed that there was a significant with p-value 0.000 before and after the intervention.

A good compliance in 5 moments of hand hygiene among clinician is important in providing high quality of patient care. The finding of this study provides the insight and understanding the barrier on compliance of 5 moments of hand hygiene among clinician. Clinicians need to change their habit to inculcate a good practice and develop a patient safety culture. Despite of high quality care render to patient, it also gives a good reputation for the organisation in long run as a potential benefit. The important of ongoing enforcement strategies have to implement onto clinician's in ensuring the compliance of 5 moments of hand hygiene sustained in health care setting.

Godin et al.,(2008) stated that inherent of 5 moments hand hygiene practice was clearly explained by another researcher. Whitby et al., (2007) as the hand hygiene practice were promptly practice when their hands were visibly soiled. This study other studies explained that even clinicians were aware on the evidence and willing to change but it is difficult for them to change their established practice. Factors have been identified need to be focus especially on attitudes, motivation and A continuous education intervention such as training sessions, medical education used in many studies, even though it give a short term impact.

CONCLUSION

This study, contributes to low compliance due habit or attitude on the five moments of hand hygiene practice. Ego feeling was believed in this specific group makes them ignore the practice although they were concern on

patient safety. The rationale that they were believed that their practice were more towards self-protection compared to preventing hospital Acquired infection was similar finding with study conducted by (Mestre *et al.*, (2012) who stated that self-protection is very powerful among healthcare worker. In the study, found that healthcare worker were more compliance during H1N1 influenza outbreak.

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