



KNOWLEDGE AMONG REGISTERED NURSES TOWARDS BENEFITS AND ADVERSE EFFECTS OF ALCOHOL BASED HAND RUB: A DESCRIPTIVE STUDY

**Paruvathy
Thangapandiy**

RN, BN, MN Nurse Manager, Operation theatre Ministry of Defense

ABSTRACT

A descriptive design adopting a quantitative approach was used in this study. Written consent was obtained from nurses in the selected units for the study who participated in the study after explanation of the aims and nature of the study by the researcher. Nurses on six wards all type of an intensive care unit (ICU, pediatrics ICU and neonatal ICU), medical and surgical ward of Hospital X were asked to participate in this study. Total of 200 nurses, 25 male nurses and 175 female nurses are participate. Tools used have some divisions, first part is concerned with the demographic characteristics of nurses; the second part comprised of 15 questions for assessing nurses' existing knowledge on benefits, third part concerned with 15 questions on adverse effects of alcohol based hand rub. Study results revealed that nurses have moderate level of awareness regarding benefits and adverse effects of hand rub. The researcher also found that the registered nurses are not up-to-date on hand hygienic technique of alcohol based hand rubs.

KEYWORDS : Hand rub, Nurses, hand hygiene, infection control.

INTRODUCTION

Nurses use a wide range of theoretical and practical knowledge in their work. In recent years they needed a considerable amount of new knowledge to provide the appropriate level of care for patients. For individual nurses today there are practical reasons for identifying nursing knowledge.

Nursing knowledge is obtained through, observation, traditions, personal experiences, authority and mentorship (Burns, 2009). Nursing resources are significant in promoting health, optimizing health outcomes and, improving the delivery of quality healthcare. Knowledge on resources by clinicians will benefit individuals, families and, the community. In addition on improving health, the resources that are used in nursing research, evidenced-based practice, knowledge needs of the nursing community and healthcare providers.

Hand hygiene is a complex issue nowadays. It is important therefore to in still adequate knowledge and practices on hand hygiene among the healthcare workers. There are about 5378 articles of initial keyword about hand hygiene that had been studied (Aiello, Coulborn, Perez and Larson, 2008). Despite of many proven studies, the hand hygiene compliance is still low in the field of healthcare setting (Boyce & Pittet 2002 and Aiello, 2008). One of the reasons for poor complied was lack of knowledge of the guidelines of hand hygiene.

Hand hygiene is the leading measure for preventing the spread of antimicrobial resistance and reducing healthcare-associated infections (HCAIs). One of the most significant and recent conversation on health delivery in hospitals are healthcare associated infection (HAI), also known as hospital acquired infection (Mani, 2010; Momen & Fernie, 2010). Minnaar (2008), mentioned that HAI also named as nosocomial infection, means that any infection that a person extend as a result of treatment in the hospital.

The researcher observed in clinical area where the nurses neglecting using the alcohol based hand rubs before and after any bedside procedures for example taking blood pressure. The researcher also got feedback from the student nurses in practical area that they are not encouraged by the ward staffs to use alcohol based hand rubs. Face to face interview done by the researcher to the patients in certain wards regarding practicing of alcohol based hand rubs by nurses before and after touching the patients. Most of the patients said that they never saw nurses do so. The points

above shows that there is lack of knowledge among nurses regarding alcohol based hand rub and hygienic hand washing. Based on all these reasons listed, the researcher would be liked to know the knowledge of benefits and adverse effects of alcohol based hand rub among the nurses.

MATERIALS AND METHODS

A descriptive design adopting a quantitative approach was used in this study. Written consent was obtained from nurses in the selected units for the study who participated in the study after explanation of the aims and nature of the study by the researcher. Nurses on six wards all type of an intensive care unit (ICU, pediatrics ICU and neonatal ICU), medical and surgical ward of Hospital X were asked to participate in this study. Total of 200 nurses, 25 male nurses and 175 female nurses are participate. Tools used have some divisions, first part is concerned with the demographic characteristics of nurses; the second part comprised of 15 questions for assessing nurses' existing knowledge on benefits, third part concerned with 15 questions on adverse effects of alcohol based hand rub. Self-assessment on effect in 48 hours after the use of alcohol based hand rub was given to the registered nurses in private hospital X. An observation assessment on technique apply for alcohol based hand rub complied was conducted by the researcher among the registered nurses in private hospital X.

RESULTS

Demographic data of study subjects

The respondent's ages ranged from 24 to 65 years. Seventy-eight (48.1%) of the respondents are between the age 24-40, seventy-four (45.7%) of the respondents are between the age of 41-55. Regarding to gender, twenty one (13.0%) were males while hundred and forty one (87.0%) of them were female. Educations wise, none of them are certificate holders. Majority of respondents are holding diploma in nursing which are eighty five (52.5%) of them. There forty two (25.9%) of the respondent are diploma in nursing and also have post basic cause. Thirty (18.5%) of the respondents are holders in degree in nursing and five (3.1%) are holders of masters in nursing.

Based on their years experiences eighty four (51.9%) of the respondents have experience less than five years while 78 (48.1%) of the respondents have experience more than 5 years. For the question on availability of alcohol based hand rub, 162 (100%) of the respondents have answered yes.

Table 1: Knowledge on benefits of alcohol based hand rubs among registered nurses in all type of intensive care unit, medical and surgical ward

No	Knowledge on benefits of alcohol based hand rubs	Frequency True	Percentage True	Frequency False	Percentage False
1.	ABHR can be complying as hand washing.	162	100%	0	0%
2.	ABHR can use when your hands are visibly soiled.	121	74.7%	41	25.3%
3.	ABHR can be used as often as needed.	162	100%	0	0%
4.	The use of ABHR is much more effective than either plain or antimicrobial soap in reducing the number of bacteria on the hands.	134	82.7%	28	17.3%
5.	ABHR bottles can be fixed to the patient's bed or bedside table (or around this area).	162	100%	0	0%
6.	ABHR affixed to trolley, placed on a dressing or medicine trays which are then taken into the patient zone.	162	100%	0	0%
7.	Hands rinsing is no needed before and after applying alcohol based hand rub.	162	100%	0	0%
8.	Need hand towel to dry the hands after alcohol based hand rub.	162	100%	0	0%
9.	ABHRs are more convenient than using soap for hand wash.	162	100%	0	0%
10.	ABHRs can be taken with you and used any time and any place.	162	100%	0	0%
11.	ABHRs can be made more accessible than sinks or other hand washing facilities	162	100%	0	0%
12.	ABHRs cause less dryness than hand washing using soap and water.	108	66.7%	54	33.3%
13.	ABHRs require less time to use than traditional hand washing.	126	77.8%	36	22.2%
14.	Nurses will have more time for patients care by complying ABHR	134	82.7%	28	17.3%
15.	ABHR was found to be most cost effective.	118	72.8%	44	27.2%

Table 2: Knowledge on adverse effects of alcohol based hand rubs among registered nurses in all type of intensive care unit, medical and surgical ward

No	Knowledge on adverse effects of alcohol based hand rubs	Frequency True	Percentage True	Frequency False	Percentage False
1.	ABHRs causing skin irritation than hand washing using soap and water.	112	69.1%	50	30.9%
2.	ABHRs causing dryness than hand washing using soap and water.	112	69.1%	50	30.9%
3.	ABHRs and hand wash with antimicrobial soap and water can be	87	53.7%	75	46.3%

	performed together.				
4.	Frequent use of ABHRs can cause skin irritation.	140	86.4%	22	13.6%
5.	Frequent use of ABHRs can cause dryness.	140	86.4%	22	13.6%
6.	Excess use of ABHRs solution will not cause any skin irritation.	151	93.2%	11	6.8%
7.	Excess use of ABHRs solution will not cause any skin dryness.	151	93.2%	11	6.8%
8.	ABHRs followed with hand washing can cause skin irritation.	13	8%	149	92.0%
9.	ABHRs followed with hand washing can cause dryness.	13	8%	149	92.0%
10.	ABHRs formulations contain humectants which can increase skin irritation.	83	51.2%	79	48.8%
11.	ABHRs formulations contain humectants which can cause dryness.	0	0%	162	100%
12.	Applying skin protective product such as hand lotion can reduce skin irritation after applies ABHRs.	0	0%	162	100%
13.	Applying skin protective product such as hand lotion can reduce skin dryness after applies ABHRs.	140	86.4%	22	13.6%
14.	Aggressively using of ABHRs can cause skin irritation.	140	86.4%	22	13.6%
15.	Aggressively using of ABHRs can cause skin dryness.	151	93.2%	11	6.8%

DISCUSSION

Hand hygiene is the simplest, most effective measure for preventing nosocomial (hospital associated infections), yet studies indicate that, on average, healthcare workers follow recommended hand hygiene procedures on less than half the number of occasions (Van Asbeck, Clemons, Markham, & Stevens 2007). Nurses' hands come into close contact with patients and are frequently contaminated during routine patient care: e.g. during auscultation and palpation or while touching the contaminated surfaces, devices or materials, for example, changing of dressing (Rogers, Mody & Kaufman, 2008).

This study shows that the registered nurses have poor knowledge in adverse effects of alcohol based hand rubs. This can be the reason why they never used alcohol based hand rubs in their working stations although it was placed in their working departments. The researcher also found that the registered nurses are not up-to-date on hand hygienic technique of alcohol based hand rubs.

REFERENCES

- Andrews NA, Cuny E, Molinari JA & Harte JA. (2010). Antisepsis and hand hygiene. In: Cottone's Practical Infection Control in Dentistry. 3rd ed. Philadelphia, PA: Lippincott Williams and Wilkins; 2010:123-140.
- Aiello, A., Coulborn, R., Perez, V., Larson, E. 2008. Effect of Hand Hygiene on Infectious Disease Risk in the Community Setting: A Meta-Analysis. American Journal of Public Health August Volume 98, Number 8, 1372-1381.
- Akyol, A.D. 2007. 'Hand hygiene among nurses in Turkey: opinions and practices', Journal of Clinical Nursing 16, 431-437.
- Burns, N & Susan K. Grove. (2009). Understanding Nursing Research: Building an Evidence-Based Practice 5th edi. Elsevier Health Sciences.

- Saunders.
5. Cambell, R. (2010). 'Hand-washing compliance goes from 33% to 95% steering team of key players drives process', *Healthcare Benchmarks and Quality Improvement* 17:1, 5-6.
 6. Guihermetti M.,Hernandes S. E. D.,Fukushigue Y.,Garcia L. B.,and Cardoso C. L. (2001). Effectiveness of hand cleansing agents for removing methicillin-resistant *Staphylococcus aureus* from contaminated hands. *Infect. Control. Hosp. Epidemiol.*,22,105-108.
 7. Kampf G. & Ostermeyer C. (2011). World Health Organization-recommended hand-rub formulations do not meet European efficacy requirements for surgical hand disinfection in five minutes. *J Hosp Infect* 2011;78:123-127.
 8. Kampf, G. & Löffler, H. (2010). 'Hand disinfection in hospitals-benefits and risks', *Journal of the German Society of Dermatology* 8:12, 978-983.