



**NURSE'S KNOWLEDGE AND PRACTICE REGARDING HAND WASHING AT
RAJSHAHI MEDICAL COLLEGE HOSPITAL, RAJSHAHI**

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ABSTRACT

Hand hygiene is mandatory to prevent the transmission of health care associated infection. Nosocomial infections due to poor hand hygiene are a major cause of increasing morbidity mortality, and health care cost among hospitalized patients worldwide. The descriptive type of cross-sectional study design was used to explore the nurse's knowledge, and practice regarding hand hygiene for hospitalized patients at Rajshahi Medical College Hospital, Rajshahi, Bangladesh from September to November, 2019. Total 150 nurses who were working at Rajshahi Medical College Hospital under Surgery, Orthopaedics and ICU wards and 50 admitted patients had study sample. Purposively type of non-probability sampling technique was followed. Data were collected by face to face interview using semi-structured questionnaire. The study explore that, nurses knowledge about hand wash answered were 44% positive. Knowledge about necessity of hand washing 60% was positive and 30% negative. knowledge about procedure of hand wash is 96% positive and 4% negative, but 84% nurse properly practice hand wash before nursing procedure and 16% do not. 96% nurses have knowledge of correct hand hygiene technique and 4% do not have.

KEYWORDS: Hand wash, Hand hygiene, Knowledge, Practice, Soap water.

INTRODUCTION

Hand hygiene (i.e., washing hands with soap and water, or disinfection using alcohol- based hand rub) remains the single most important measure of preventing the spread of antimicrobial resistant pathogens and subsequent nosocomial infection.^[1,2] Hand washing or hand hygiene is an ancient cultural custom that goes back to an immemorial time. It was observed primarily to remove dirt and to relieve people symbolically from physical and moral evils. It is so basic, so simple, almost insulting or embarrassing even to mention, especially at an advanced practice level.^[3]

Unfortunately, in health care, compliance with hand hygiene practices has been below an acceptable level. One study aimed to measure medical staff attitude towards hand hygiene; this showed compliance rates of hand cleaning of less than 50%.^[4] Another study done on a similar topic showed a compliance rate of 63 %.^[5] These studies demonstrate that hand hygiene practices are below an acceptable level. So failure to perform appropriate hand hygiene either by washing or

disinfection by any means or technique is considered to be the leading cause of infection.

Every day, consciously and unconsciously, we make decisions regarding our patients' care. To make clinical decisions, almost instinctively we resort to variety of resources, including our own clinical experiences and discussions with colleagues - we rely on textbooks, journal articles, and previous educational experiences. As educators, we should evaluate the methodology of teaching students and residents how to make clinical decisions. As practitioners, it is crucial to think critically about how we make clinical decisions. Evidence-based practice (EBP) is an approach to health care wherein health professionals use the best evidence possible, i.e. the most appropriate information available, to make clinical decisions for a patient. EBP values, enhances, and builds on clinical expertise, knowledge of disease mechanisms, and pathophysiology.^[6]

Over the past few years, scientific evidence to support the role of hand hygiene in the improvement of patient

safety has increased considerably, but some key controversial issues still challenge care practitioners and researchers. Key among these is the question of compliance in practice and it is now recognized that there is no single solution; rather multimodal programmes are needed to promote compliance.^[7]

Healthcare-Associated Infections (HAIs) represent a major risk to patient safety and contribute towards suffering, prolongation of hospital stay, cost and mortality.^[8,9] In addition to that, the impact of HAIs implies long-term disability, increases resistance of microorganisms to antimicrobials, adds massive additional financial burdens, increases fatalities, poses a high costs for the health systems, let alone the emotional stress for patients and their families. Although the risk of acquiring HCAI is universal and pervades every health-care facility and system around the world, the global burden is unknown because of the difficulty of gathering reliable diagnostic data.^[10]

Transmission of health care-associated pathogens takes place through direct and indirect contact, droplets, air and a common vehicle. Transmission occurs mostly via large droplets, direct contact with infectious material or through contact with inanimate objects contaminated by infectious material. Performance of high-risk patient care procedures and inadequate infection control practices

contribute to the risk. Transmission of other viral (e.g. human immunodeficiency virus (HIV), hepatitis B) and bacterial illnesses including tuberculosis to HCWs is also well known^[11] So, it is very important to conduct the study with the aim of to explore the nurse's knowledge, and practice regarding hand hygiene for hospitalized patients at Rajshahi Medical College Hospital, Rajshahi.

MATERIALS AND METHODS

The descriptive type of cross-sectional study design was used to explore the nurse's knowledge, and practice regarding hand hygiene for hospitalized patients at Rajshahi Medical College Hospital, Rajshahi, Bangladesh from September to November, 2019. Total 150 nurses who were working at Rajshahi Medical College Hospital under Surgery, Orthopedics and ICU wards and 50 admitted patients had study sample. Purposively type of non-probability sampling technique was followed. Data were collected by face to face interview using semi-structured questionnaire. To complete interview average 20 minutes were required. The data entry was started immediately after completion of data collection. Then data processing and analysis were done by using appropriate method of Statistical Package for Social Sciences (SPSS) Version 26. Following approval was given by the Ethical and Research Committee of Rajshahi Medical College Hospital Rajshahi, Bangladesh.

RESULT

Table 1: Socio-demographic characteristics of the Nurses (n=150).

Variable	Parameters	Frequency	Percent
Age	21-30 Years	12	8
	31-40 Years	75	50
	41-50 Years	45	30
	50 +	18	12
Gender	Male	15	10
	Female	135	90
Marital Status	Single	3	2
	Married	147	98
	Widow	0	0
Religion	Muslim	138	92
	Hindu	12	8
	Christen	0	0
Academic Qualification	S.S.C	132	88
	H.S.C	15	10
	B.Sc	3	2
	MA/MSc		
Professional Qualification	Diploma in Nursing & Midwifery	117	78
	Diploma in Nursing & Orthopedic	15	10
	B.Sc in Nursing	12	8
	B.Sc in Public Health Nursing	6	4
	MPH	0	0
Length of Service	0-10 Years	75	50
	11-20 Years	39	26
	21-30 Years	36	24
	31-40 Years	0	0

One Hundred Fifty nurses were selected for study, the age of nurses were 4% at the age of 21-30 years, 50% at the age of 31-40 years, 30% at the age of 41-50 years, 12% at the age of above 50 years. Female nurse were 90%. The marital status of the nurse's was 2% single and 98% married, and widow was 0%. Muslim nurses were predominant and 92% of the total, only 8% was Hindu.

Nurses academic qualification were SSC was 88%, HSC was 10% and 2% was B. Sc., and diploma in nursing & midwifery were 78%, diploma in Orthopaedics nursing 10%, BSC nurses were 4%. The nurses have different length of service and 12 nurses are serving from 21-30 years, 13 nurses from 11-20 years; 25 nurses are 1- 10 years.

Table 2: Socio-demographic characteristics of the Patients (n=50).

Variable	Parameters	Frequency	Percent
Age	15-30 Years	45	30
	31-40 Years		40
	41-50 Years	36	24
	51 + Years	9	6
Gender	Male	114	76
	Female	36	24
Marital Status	Single	144	96
	Married	6	4
Religion	Muslim	114	76
	Hindu	36	24
Academic Qualification	Illiterate	18	12
	Primary School	60	40
	Secondary	30	20
	H.S.C	12	8
Occupation	Service	27	18
	Labor	24	16
	Business	45	30
	Farmer	15	10
	House Wife	39	26
Monthly Family Income	1500 -3000/-	61	42
	3001 – 5000/-	57	38
	5001 – 10,000/-	6	4
	>- 15,000/-	24	16
Medical Payment	Fully reimbursed	0	0
	Medical Insurance	0	0
	Govt. Support	138	92
	NGO Support	12	8
Home Location	Rajshahi Division	144	96
	Others	6	4
No. of Family Member's	3 – 5 Member	138	92
	6 – 8 Members	12	8

Fifty patients were selected for the study and the age of patients were 30% of the age of 15-30 years, 40% of the age of 31-40 years, 24% of the age of 41-50 years, 6% of the age of above 50 years. 76% patients were male and 24% female. Muslims were predominant having 76% of the total and only 24% was Hindu. Among 50 patients 12% were illiterate and 40%, 20%, and 8% were primary, secondary, higher secondary, educated

respectively. The patients were 18% service holder, housewife 26%, labour 16%, farmer 10% and 30% businessman. The monthly average income of the patient's family was 42% of the income group Tk. 1500-3000/-, 38% having Tk. 3001-5000/-; 410% having income group of Tk. 5001-10000/- and only 16% in the income group of above 15,000 taka per month.

Table 3: Information related to Knowledge and Practice of the participated nurses regarding hand washing (n=150).

Question	Answer			
	Yes		No	
	Yes	%	No	%
Do you establish & maintain therapeutic relationship with patient?	120	80	30	20
Do you ensure confidentially when taking with patient?	120	80	30	20

Do you complete hand washing training?		27	18	123	82
Do you ensure provide health education about hand washing?		141	94	9	6
Do you ensure provide health education about hand washing?		126	84	24	16
Do you know benefit of hand washing?		90	60	60	40
Do you know benefit of hand washing?		144	96	6	4
What diseases can be prevented by hand washing?	Diarrhoeas	15	10		
	Hook worm	21	14		
	Dysentery	24	16		
	All above	90	60		
Do you know complication occurs if not-provided hand washing?		111	64	39	26
What complication may occurs?	Infection	60	40		
	Diarrhoeas	45	30		
	Vomiting				
	Hook worm	45	30		
Do you ensure proper reporting and recording?		120	80	30	20
Do you provide health education about hand washing?		135	90	15	10
Do you listen and give time to patient as per need?		135	90	15	10
Does the patient co-operative with you in counselling?		132	88	18	12
Do you attend duty in time?		120	80	30	20
Do you advice about hand washing maintain personal hygiene?		144	96	6	4
Do you know the technique of hand washing?		144	96	6	4
Do you know the technique of hand washing?		126	84	24	16
Do you face any problem for dirty hand?		105	70	45	30
What is idea about hand washing?		144	96	6	4
Do you know the interval of hand washing?	½ hour	0	0	0	0
	Before any work	90	60		
	After and before meal	60	40		

Most of the questions were nurse's knowledge and practice about hand hygiene interviewed nurses responded positively. At the level of knowledge about hand wash answered 44% positive. Knowledge about necessity of hand washing was 60% positive 30% negative. knowledge about procedure of hand wash is 96% positive and 4% negative, but 84% nurse properly practice hand wash before nursing procedure and 16% do not. 96% nurses have knowledge of correct hand hygiene

technique and 4% do not have. 64% nurses know about the complication and 36% do not know. 84% nurses provide education and counselling, 16% do not. Here, 80% got training on hand washing; about benefit of hand washing 60% nurses gave positive answer; about diseases prevented by hand washing 10% said diarrhoea, 14% hookworm, 16 dysentery and 60 opined as all the mentioned diseases.

Table 4: Information related to Knowledge and Practice of the participated patients regarding hand washing (n=50).

Question	Answer			
	Yes		No	
	Yes	%	No	%
Would you tell me what ideas about hand wash are?	66	44	84	56
Do you know about hand wash?	33	22	117	78
Do you know duration of hand wash?	39	26	111	72
Do you know the interval between hand wash?	30	20	120	80
Do you face any problem to unhygienic to your child?	84	56	66	44
Do you know the benefit of proper hand wash?	123	82	27	18
Do you know the proper hand wash is preventing disease?	117	78	33	22
Do the nurses spend enough time with you?	54	36	96	64
Do the nurses come when you called for them?	89	56	61	42
Do they are helpful to you for hand wash?	69	46	81	54
Do they give emotional support?	89	46	81	54
Do they behave good manner in working situation?	39	26	111	74

Regarding hand wash procedure 44% patients answered positively and 66% do not know. About duration of hand

wash only 26% patients know the duration; interval between hand wash 20% positive and 80% negative;

proper hand wash prevent disease 78% positive and 22% negative; nurses spend enough time with your patient 36% agreed and 64% do not agree; Do the nurses come when you called for them 56% agreed and 42% do not agree. Nurse are helpful for hand wash education 46% gave said yes and 54% said no.

DISCUSSION

Health care associated infections affect hundreds of millions of people around the world and it is a major global issue for patient safety. Moreover, the most common way that micro-organisms (germs), particularly bacteria, are spread and cause infection is by being carried on people's hands. Hand hygiene is the most important measure to avoid the spread of harmful germs and to prevent ill health. Regular and thorough hand hygiene is always important when working in an environment or organization where health care is provided. So, having clean hands helps to protect patients, particularly the most vulnerable, as well as health care workers.

In general, the research suggests nurses are possibly more concerned about their own safety than transmitting infection to patient. So we would expect to find better hand hygiene after patient contact compared to before patient contact.

The findings make an important contribution to the study of healthcare workers' hand-hygiene behavior and control of healthcare-associated infections. A possible explanation of the results may be related to variations in organizational support and hospital culture.

Some strategies may be unnecessary in certain circumstances, but may be helpful in others. In particular, changing the hand-hygiene agent could be beneficial in institutions or hospital wards with a high workload and a high demand for hand hygiene when alcohol-based hand rubs are not available.

CONCLUSIONS

Hand-hygiene promotion has been challenging for >150 years. In-service education, information leaflets, workshops and lectures, automated dispensers, and performance feedback on hand-hygiene adherence rates have been associated with transient improvement. Several strategies for promotion of hand hygiene in hospitals have been published. These strategies require education, motivation, or system change.

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REFERENCES

1. Barrs, A. Hand washing: breaking the chain of infection, 2000. <http://www.vpico.com/articlemanager/printerfriendly.aspx?article559659>.
2. Pittet, D., Allegranzi, B., Sax, H., et al. Evidence-based model for hand transmission during patient care and the role of improved practices. *Lancet Infect Dis*, 2006; 6: 641e652.
3. Barbacombe, J. Back to the basics – hand washing. *Geriatric Nursing*, 2004; 25: 90–92.
4. Bischoff, W. E., Reynolds, T. M., Sessler, C. N., Edmond, M. V., and Wenzel, R. P. Hand washing compliance by healthcare workers: the impact of introducing accessible, alcohol-based hand antiseptic. *Archives of Internal Medicine*, 2000; 60(7): 1017-1021.
5. Suchitra, J., and Lakshmidevi, N. Hand washing compliance: is it a reality? *Online Journal of Health and Allied Sciences*, 2006; 5 (20). <http://ojhas.org/issue20/2006-4-2.htm>.
6. Macnee, C. L. Understanding nursing research: Reading and using research in practise. Philadelphia, 2004.
7. Pittet, D., Hugonnet, S., Harbarth, S., Mourouga, P., Sauvan, V., Touveneau, S., et al. Effectiveness of a hospital-wide programme to improve compliance with hand hygiene. *Lancet*, 2000; 356(9238): 1307-1312.
8. Cosgrove, S. E. The relationship between antimicrobial resistance and patient outcomes: mortality, length of hospital stay, and health care costs. *Clinical Infectious Diseases*, 2006; 42(2): S82eS89.
9. Graves, N., Weinhold, D., Tong, E., et al. Effect of healthcare acquired infection on length of hospital stay and cost. *Infection Control and Hospital Epidemiology*, 2007; 28: 280e292.
10. WHO (World Health Organization). Guidelines on hand hygiene in health care. First global patient safety challenge: clean care is safer care. Geneva: World Health Organization, 2009.
11. Girou, E., and Oppein, F. Handwashing compliance in a French university hospital: new perspective with the introduction of hand-rubbing with a waterless alcohol-based solution. *Journal of Hospital Infection*, 2001; 48 (Supplement A), S55-S57.