PACIFIC JOURNAL OF MEDICAL SCIENCES

{Formerly: Medical Sciences Bulletin}

ISSN: 2072 – 1625

Pac. J. Med. Sci. (PJMS)

www.pacjmedsci.com. Emails: pacjmedsci@gmail.com; pacjmedsci1625@gmail.com

HAND HYGIENE AMONGST HEALTH WORKERS IN A TEACHING HOSPITAL: A STUDY OF KNOWLEDGE, ATTITUDE AND PRACTICES

^Shamila Hamid, *Syed Arshad Hussain Andrabi and ^Shahnaz Nabi

^Department of Community Medicine Government Medical College (GMC), Srinagar, India, *Health Department Jammu & Kashmir (J & K) India

***Correspondence to**: syed.arshadhussain@yahoo.co.in, shamilaqadri@gmail.com

HAND HYGIENE AMONGST HEALTH WORKERS IN A TEACHING HOSPITAL: A STUDY OF KNOWLEDGE, ATTITUDE AND PRACTICES

^Shamila Hamid, *Syed Arshad Hussain Andrabi and ^Shahnaz Nabi

^Department of Community Medicine Government Medical College (GMC), Srinagar, India, *Health Department Jammu & Kashmir (J & K) India

***Correspondence to**: syed.arshadhussain@yahoo.co.in, shamilaqadri@gmail.com

ABSTRACT

Though a relatively simple procedure, Hand Hygiene compliance rates tend to be highly variable and poor. This cross-sectional knowledge, attitude and practices (KAP) study was conducted at Shri Maharaja Hari Singh (SMHS) Hospital, a teaching hospital in Srinagar, India. The subjects that participated in this study included 106 nursing staff working in different departments of the Hospital. The Self-structured one plus WHO,s hand hygiene questionnaire for health care workers was used in this study. Almost 80% of the respondents skipped hand washing when in hurry. Only 12% and 28% used to hand wash before touching a patient and before doing simple procedures respectively. This study depicts the poor compliance of health workers regarding hand hygiene.

Key Words: Hand Hygiene, Infections, Health care facility
Submitted March 2018, Accepted May 2018

INTRODUCTION

Every 1 in 20 hospitalised patients may be affected by Health Care associated infections (HAI) [1]. Most of the infections are spread via health care worker's hands and thus Hand Hygiene is the single most effective measure to prevent this spread. Though a relatively simple procedure, Hand Hygiene compliance rates tend to be highly variable and poor [2]. Hand Hygiene is a general term referring to any action of hand cleansing by using water & detergent and/or the use of alcohol-based hand sanitization for the removal of transient micro-organisms from hands [3]. Annually, approximately 2.4 million deaths can be prevented by good hygiene practices, reliable sanitation & drinking water worldwide [4]. A Meta -analysis showed that improvements in hand washing reduced incidence of upper respiratory tract infections (URTI) and gastrointestinal illnesses by 21% and 31% respectively [5]. Though preventable with simple hand washing, Health Care Workers are reluctant to adopt recommended practices to curb the infection [6]. Lack of appropriate facilities, high staff to patient ratio, insufficient

knowledge and attitude of staff may be the reasons responsible for lack of compliance to hand washing [7].

In India, especially in Jammu and Kashmir (J & K) there is paucity of studies exploring this subject, although the prevalence of HAI is high in the whole of Asia [8], J & K being no exception. To improve Health Care Workers compliance with health Hygiene, it is therefore necessary to consider the hindering factors and attempt to improve them. With this background, this study was conducted to assess the level of knowledge, attitude and practices (KAP) among healthcare workers of SMHS hospital and thence to identify gaps and enhance good practices.

METHODOLOGY:

This cross-sectional KAP study was conducted at Shri Maharaja Hari Singh (SMHS) Hospital, a teaching hospital in Srinagar, India. Srinagar is the summer capital of Jammu & Kashmir state and SMHS hospital provides tertiary health care for residents of Srinagar as well as patients referred from other districts.

Study subjects were the nursing staff working in different departments. Convenience sampling was used to select the 106 subjects. Participant selection was purely voluntary. The purpose of study was fully explained to the participants and verbal consent was obtained. Confidentiality was ensured by avoiding use of names of participants.

The study was approved by the Institutional ethical committee. The investigator visited the participants in the hospital wards and explained the nature of the study. Thereafter questionnaire was administered. It was a self-structured one plus WHO,s hand hygiene questionnaire for health care workers. Knowledge and attitude were assessed using 11 and 8 questions respectively. For the assessment of practices there were 15 questions to assess practical activities performed by respondents. Demographic information was also collected. Data analysis was done using SPSS version software. Descriptive statistics was used to calculate percentages for each of the responses given.

RESULTS

A total of 106 Health workers participated in the study.40 (37.7%) were below 30 years of age and 66 (62.3%) were above 30 years of age. Of the 106 health workers 20 (18.9%) were males and 86 (81.1%) were females. When separated into age groups 4 of the 20 males were below 30 years of age and 16 were above 30 years of age; while 36 of the 86 females were below 30 years of age and 50 were above 30 years of age. Of the 106 participants 69 (65.1%) claimed to have received training in hand hygiene.

Responses to questions on Knowledge regarding hand hygiene are in Table 1:

Fifty percent (53/106) of respondents believed that unclean hands of Health care workers are the main route of cross-transmission of infection between patients in a health facility; while none(0/106) believed that using the same apparatus for different patients like BP cuffs and thermometers, is a main route of cross transmission of infection between patients.91.5% (97/106) of respondents had knowledge that hand hygiene before touching a patient and immediately before aseptic procedure prevents transmission of germs to patient; while all believed that hand hygiene after touching a patient prevents transmission of germs to health worker. 73.6% (78/106) respondents believed that hand washing and hand rub are to be performed in sequence ;while57.5%(61/106) respondents believed that hand rub is more effective and rapid than hand wash.43.4%(46/106) participants believed that 20 seconds is the minimum time required for Alcohol based hand rub to kill most of the germs on your hand. 60.4% (64/106) believed that hand rub should be used before abdominal palpation. 20.6% (22/106) had knowledge that no hand hygiene method is to be used before abdominal palpation. 72.6% (77/106) participants believed in washing hands after emptying bed pan and after making patient's bed. Likewise 64.2% (68/106) believed in washing hands with soap and water after visible exposure to blood .Only 60.4%(64/106) had knowledge that damaged skin increases likelihood of colonization of hands with germs.42.4%(45/106) respondents were of the opinion that steps of hand washing are 4 and an equal percentage (42.4%) believed it to be 5.Only 7.5% (8/106) tick marked all the dirty areas of the hand mentioned in questionnaire.

Responses to the questions related to Attitude are presented in Table 2:

64.1 % (68/106) of respondents had a perception that they have sufficient knowledge about hand hygiene while 52.8% (56/106) believed that they practice correct hand hygiene all times. 79.2 % (84/106) respondents skipped hand washing when in hurry while 41.5% (44/106) reused gloves after removal.

Responses to the questions related to Practices and facilities available are presented in Table 3 and Table 4 respectively:

Only small percentage of 11.3%(12/106) and 26.4%(28/106) respectively used to hand wash before touching a patient and before doing simple procedures.88.6% (94/106) participants had facility for hand wash at their workplace and 80.1%(85/106) had gloves available. Motivation to hand washing in majority was fear of contracting infection while major barrier to hand washing was "forget to wash".

Table 1: Knowledge regarding Hand Hygiene (Note that not all the percentages are cumulative)

Questions	Variables	No (%)	
Main route of cross-transmission of infection between patients in a health care facility	a) Unclean –Hands of Health Care Workers	53(50.0)	
	b) Germs in the air within the hospital	32(30.2)	
	c) Patient's exposure to pathogens on beds, linen, floor etc.	21(19.8)	
	d) Using same apparatus for different patients like BP cuffs thermometers etc.	Nil	
Hand Hygiene: Actions prevent transmission of germs to the patient	a) Hand hygiene before touching a patient	97(91.5)	
	b) Hand hygiene immediately after a risk of body fluid exposure	94(88.7)	
	c) Hand Hygiene after exposure to immediate surroundings of patient	77(72.6)	
	d) Hand hygiene immediately before a aseptic procedure	97(91.5)	
Hand Hygiene: Actions which prevent transmission of germs to the Health care worker	a) Hand Hygiene after touching a patient.	106(100.0)	
	b) Hand hygiene immediately after a risk of body fluid exposure	100(94.3)	
	c) Hand Hygiene after exposure to immediate surroundings of patient.	80(75.5)	
	d) Hand Hygiene immediately before a clean/aseptic procedure.	80(75.5)	
Following statements on Alcohol-based hand rub are true?	a) Hand –rub is more rapid than Hand washing.	89(84.0)	
	b) Hand –rub causes more skin dryness.	70(66.0)	
	c) Hand-rub is more effective against germs.	61(57.5)	
	d) Hand-washing and Hand–rub are recommended to be performed in sequence	78(73.6)	
Minimum time needed for Alcohol-based Hand rub to kill most germs on your hand?	a) 3 seconds	13(12.26)	
	b) 10 sec.	13(12.26)	
	c) 20 sec.	46(43.39)	
	d) 1 minute	34(32.07)	
		Hand wash	Hand Rub
Which type of hand hygiene method is required in following situations?	a) Before Abdominal Palpation.	20(18)	64(60.37)
	b) Before giving an injection	53(50)	49(46.22)
	c) After emptying a bed pan	77(72.64)	25(23.58)
	d)After removing gloves	56(52.83)	45(42.45)
	e)After making patient's bed	77(72.64)	28(26.41)
	f)After visible exposure to blood	68(64.2)	36(33.96)
Following are associated with increased likelihood of colonization of hands with germs?	a) Wearing Jewellery (rings, bangles)	85(80)	
	b) Using artificial Finger nails	97(91.50)	
	c) Damaged skin	64(60.37)	
	d) Regular use of hand cream	36(33.96)	
Number of steps of hand washing	a) 2	3(2.83)	
	b) 3	13(12.25)	
	c) 4	45(42.30)	
	d) 5	45(42.30)	
Dirty areas of hand are: palm, fingers, finger tips, dorsum of hands, nails, web spaces (Tick your choice)	Those that correctly tick marked all the correct areas	8 (7.5)	
Hand Hygiene recommended	a) Before Medical Examination	84(79.24)	
	b)Before taking blood sample with gloved hands	73(68.86)	
	c)After wound Dressing with gloved hands	84(79.24)	
	d)After shaking hands	89(83.96)	
	e)After touching linen/bedding of Patient	93(87.73)	

Table 2: Attitude towards hand washing

Variable	No. (%)
Have sufficient knowledge about hand hygiene	68(64.2)
Think you practice correct hand hygiene all times	56(52.8)
Skip hand washing often when you are in hurry or over burdened with work	84(79.2)
Think wearing sterile gloves reduces the need for hand washing	93(87.7)
Stress on hand washing , if someone skips it	68(64.2)
Feel bad if and when you skip hand washing	77(72.6)
Use same pair of gloves for care of more than 1 patient	48(45.3)
Re-use your gloves after removal	44(41.5)

Table 3: Practices of health workers: N (%)

Practices	Always	Sometimes	Never
Frequency of Hand washing before touching the patient	12(11.3)	82(77.4)	12(11.3)
Frequency of Hand washing before simple procedures	28(26.4)	57(53.8)	21(19.8)
Frequency of Hand washing after touching the patient	40(37.7)	57(53.8)	9(8.5)
Frequency of Hand washing after simple procedures	32(30.2)	62(58.5)	12(11.3)
Frequency of Hand washing in a day's work	53(50.0)	53(50.0)	----
Frequency of Hand washing before meals or snacks	61(57.5)	40(37.7)	1(0.9)
Frequency of Hand washing after going to washroom	65(61.3)	28(26.4)	13(12.3)

Table 4: Facilities available & Practices of health workers N (%)

Facility for hand wash available at work place	94(88.7)		
Water & soap/ sanitizers available	85(80.2)		
Towel/ paper available for drying hands	37(34.6)		
Gloves available	85(80.2)		
Routinely use for hand hygiene	Soap and water 61(57.5)	Water alone 21(19.8)	Alcohol based hand rub 24(22.6)
Hand washing technique before meals and snacks	Soap and water 49(46.2)	Water alone 57(53.8)	Any other 0.0
Motivation to hand wash	Fear of contracting Infection 69(55.1)	Habitual 28 (26.4)	Dislike for filth 9(8.5)
Barriers to hand washing	Forget to wash 48 (45.3)	Lack of time 28(26.4)	Lack of soap & Water 30 (28.3)

DISCUSSION:

The results indicated that the participants in the present study had relatively good knowledge and attitude but poor practice of hand hygiene. Though majority recognised the importance of hand hygiene but practical compliance regarding the same was poor. The results also show that most of the respondents maintained hand hygiene but it was inadequately practiced. One of the main reasons for skipping hand hygiene was 'forget to wash' .Similar findings have been reported in other studies as well [9, 10]. Other barriers were lack of soap and water, and lack of time which are similar to the findings in other studies [9, 10]. The 'Forgetfulness' factor can be removed by regular sensitising of the hospital staff via displaying posters on walls in the hospitals. CME,s and trainings and retraining of the staff. Hospital authorities should ensure availability of facilities including water, soap, tissue papers and sanitizers for staff to use.

One of the main motivation factors for hand hygiene among the workers was fear of contracting infection. This is consistent with findings reported in other studies [11, 12]. The present study showed that 57.5% (61/106) of respondents washed hands before meals while 61.3% (65/106) washed hands after going to wash room. These results are higher than the 46.5% and 61.0% respectively reported by Abinye et al [13]. In our present study, only 34.6% (37/106) respondents had availability of towel/paper for drying hands at their work places. This is despite the fact that hands drying are as important as hand washing in maintenance of hand hygiene. It is important therefore that hospital authorities provide these basic requirements for the staff to use. Our results regarding rates of hand washing with soap and water before interacting with patients was consistent with yet another study [13].

CONCLUSION

This study depicts the poor compliance of health workers regarding hand hygiene, emphasising the need for immediate adopting of such measures so that knowledge, attitude and practices of Health workers improve. A multi-pronged approach ,including keeping facilities available, regular trainings, reinforcement, education especially motivational programs need to be adopted and implemented in order to ensure strict hand hygiene compliance. More research is advocated to obtain more data that can be used to design interventions for improving compliance of hand hygiene in our hospitals..

REFERENCES:

1. WHO guidelines on Hand Hygiene in Health Care, 2009 .2014, Sep 11th, Available from: www.ncbi.nlm.gov/books/NBK144013/ pdf/Bookshelf NBK144013.pdf.
2. CDC –Public Health Reports. Estimating Health Care Associated

Infections and Deaths in US Hospitals.2007 Mar-Apr[PMC free article] [Pub Med]

3. Rabbi SE,Dey NC. Exploring the gap between hand washing knowledge and practices in Bangladesh: a cross-sectional comparative study.BMC Public Health.2013; 13:89.
4. Aiello AE, Coulborn RM, Perez V, Larson ED. Effect of Hand Hygiene on infectious disease risk in the community setting: a meta-analysis.Am J Public health.2008; 98:1372-1381.
5. Mahaedo B Shinde, Vaishali R Mohite. A Study to assess Knowledge, Attitude and Practices of Five Moments of Hand Hygiene among Nursing Staff and Students at a Tertiary Care Hospital at Karad .International Journal of Science and Research(IJSR) .v.2014; 3; ISSN (online): 2319-7064.
6. CD Chisholm, WH Cordell, DR Nelson. Hand washing frequency in an emergency department J Emerg Nurs. 1994; 20: 183-88.
7. WHO .Risk Factors Influencing Children,s Healthy Environment in Kaplamai Division Trans-Nzoia District .Baseline Survey Report .Geneva : WHO; 2010.
8. Sreejith Sasidharan Nair, Ramesh Hanumantappa, Shashidhar Gurushantswamy Hiremath. Mohammad Asaduddin Siraj, and Pooja Raghunath.Knowledge , Attitude and Practice of Hand Hygiene among Medical and Nursing students at a Tertiary Health Care Centre in Raichur, India. ISRN Preventive Medicine vol.2014 (2014), Article ID 608927,4 page http://dx.doi.org/10.1155/2014/608927.
9. Pittet D, Mourouga P, Perneger TV. Compliance with handwashing18. Pittet D, Mourouga P, Perneger TV. Compliance with handwashing in a teaching hospital. Infection control program. Ann Intern Med. 1999; 130:126–130.
10. Larson EL, Bryan JL, Adler LM, Blane C. A multifaceted approach to changing hand washing behavior. Am J Infect Control. 1997; 25:3–10.
11. Bischoff, W.E., T.M. Reynolds, C.N. Sessler, M.B. Edmond and R.P. Wenzel, Hand washing compliance by health care workers: The impact of introducing an accessible, alcohol-based hand antiseptic. Arch. Intern. Med.2000; 160: 1017-1021. PMID: 10761968
12. Pittet, D., A. Simon, S. Hugonnet, C.L. Pessoa-Silva and V. Sauvan and TV Perneger. Hand hygiene among physicians: performance, beliefs, and perceptions. Ann. Intern. Med.2004; 141: 1-8. PMID: 15238364
13. Balafama Abinye Alex-Hart and Peace Ibo Opara Handwashing Practices amongst Health Workers in a Teaching Hospital Am. J. Infect. Dis.2011; 7 (1): 8-15.