

Clinical Impact of Hand Hygiene by KAP Survey among Medical Students

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ABSTRACT

Objective: To determine knowledge, attitude and practices of hand hygiene among students of Fazaia Medical College.

Study Design: Observational cross-sectional study.

Place and Duration: The study was carried out at department of Pathology, Fazaia Medical College, Air University E-9 Islamabad. The duration of our study was 8 months from June 1st 2020 to January 31st 2021.

Methodology: A questionnaire having 13 closed ended items regarding knowledge, attitude and practice of hand washing among medical students was used to collect data. A total of 247 medical students participated in the study. Data was collected and analyzed on SPSS version 23.

Results: Sixty-seven percent students expressed that they had basic knowledge and had practicing attitude towards hand washing. Majority of students (90%) practiced hand washing during their interaction with patients in clinical rotations and in their routine activities at FMC. However, healthier hand washing practices among female medical students were observed as compared to male students.

Conclusion: The medical students of FMC had moderate knowledge and positive attitude towards hand washing practices.

Keywords: Hand Hygiene, Awareness, Patient Safety, Control of Infections, Hand Wash.

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INTRODUCTION

Hand hygiene (HH) is considered as the single most effective measure to prevent hospital-acquired infections. It may be practiced either by hand washing or hand decontamination¹. Among the different ways of transmission, person-to-person contact through the hands is all-important in the spread of

bacterial infections².

Effective hand hygiene has been related to reduce the susceptibility to various infections. However, it has not been well determined at graduate college level³. Medical students play a major role in the health care system. Hence it is important for them to have adequate knowledge to carry out practices of hand hygiene with positive attitude⁴.

A few studies have been conducted that developed an educational module for the undergraduate students.^{3,5} Such studies are important to gather data, as the students during their clinical rotation visit the hospitals and other health care centers. They can potentially transmit or receive infections. Hence medical students need to be educated formally to this basic and essential preventive measure by various modalities like lectures, seminars and workshops^{4,6}.

In 2009, a campaign was initiated by World Health Organization (WHO), 'Save Lives: Clean Your Hands,' which emphasized the hand washing techniques in a simple way, as it is a fundamental step for prevention against various infectious diseases^{7,8}.

Various educational programs have been conducted in this regard, which include clinico-pathological conferences involving medical students and teaching staff. These programs were associated with improvements in hand hygiene practices and significant reductions in rate of hospital-acquired infections. Some of the factors that were considered to be barriers for HH compliance among health care workers included, lack of: knowledge, interest, facilities, poor understanding of correct hand washing technique, busy routine and lack of institutional support for good hand hygiene.^{9,10}

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Our survey aimed to collect the data regarding the awareness and practices of hand washing among FMC medical students. The questionnaire used in this study covered the perceptions as well as various hand hygiene practices of medical students in their clinical rotations and in daily routine.

METHODOLOGY

This study included medical students of Fazaia Medical College, Air University from June 1st 2020 to January 31st 2021. The Faculty administrative members and helping staff members were amongst the exclusion criteria. Written informed consent was obtained from each student. It was a cross-sectional observational study. Institutional clearance for the study was obtained from FMC Institutional Review Board (IBD/FMC/1341/1/CM) on 8th Aug 2019. The questionnaire was taken from WHO perception survey designed for health care workers and modified to adapt to our settings. The questionnaire was in English language having 13 closed ended questions in total. The questions comprised of knowledge, attitude and practice and same is attached as Annexure ‘A’. Initially, the questionnaire was distributed amongst 20 students before final distribution to the representative population size of our study.

Data Analysis: Data were statistically analyzed and validated using software SPSS version 23.

RESULT

Data was collected from 247 medical students of Fazaia Medical College, out of these there were 76 (30.7%) male respondents and 171 (69.2%) female respondents. We analysed the knowledge and attitude of the students regarding their Hand Hygiene practices. We took the right answers as correct response and took their average percentage. The knowledge of medical students about hand hygiene is shown in Table I.

Table - I: Knowledge of medical students for hand hygiene (N=247)

S. No	Questions	Total students	Male students	Female students	
		N= 247 (%)	n= 76 (30.7%)	n= 171 (69.2%)	
(a)	Hand hygiene is defined as any method that removes micro-organisms (bacteria, viruses)	232 (93.9%)	66 (86.8%)	166 (97%)	
(b)	Washing hands with soap and water is suggested to be the best way to reduce the No. of microbes	207 (83.8%)	57 (75%)	150 (87.7%)	
(c)	Are you aware about 5 movements of hand washing	164 (66.3%)	41 (53.9%)	123 (71.9%)	
(d)	Hand washing should be for a minimum duration of	15 – 20 sec	66 (26.7%)	26 (34.2%)	40 (23.3%)
		30 – 60 sec	174 (70.4%)	46 (60.5%)	128 (74.8%)
		5 min	7 (0.02%)	4 (5.2%)	3 (1.7%)

Above mentioned table reflects that an average of 167(67.6%) medical students (47(62.4%) male and 120(69.9%) female students) had moderate knowledge of hand hygiene. Furthermore, female medical students 120 (69.95%) had better knowledge of hand hygiene than male medical students 47 (62.4%).

Table - II: Attitude of medical students towards hand washing (N=247)

S No	Questions	Total students	Male students	Female students	
		N=247 (%)	n=76 (%)	n=171 (%)	
(a)	How many times in a day you prefer washing hands	3 times	17 (6.8%)	7 (9.2%)	10 (5.8%)
		5 times	55 (22.2%)	20 (26.3%)	35 (20.4%)
		>5 times	175 (70.8%)	49 (64.4%)	126 (73.6%)
(b)	Reasons for non-compliance with hand hygiene	Too busy	57 (23.0%)	20 (26.3%)	37 (21.6%)
		Un-aware	97 (39.2%)	25 (32.8%)	72 (42.1%)
		Lack of interest	71 (28.7%)	21 (27.6%)	50 (29.2%)
		Lack of facility	22 (8.90%)	10 (13.1%)	12 (7.0%)
(c)	Do you think hand hygiene is	Person’s own responsibility	228 (92.3%)	69 (90.7%)	158 (92.3%)
		Institutional issue	19 (7.69%)	7 (9.2%)	12 (7.0%)
(d)	Do you prefer washing hands with	Soap and water	203 (82.1%)	54 (71%)	149 (87.1%)
		Hand sanitizers enough	44 (17.8%)	22 (28.9%)	22 (12.8%)

Table - III: Comparison of hand hygiene practices among male and female students (N=247)

S No	Questions	Male (Yes)	Female (Yes)	Total Students	
		n=76 (%)	n=171 (%)	N=247 (%)	
(a)	Do you practice hand hygiene before and after examining the patients?	66 (86.8%)	157 (91.8%)	223 (90.3%)	
(b)	Do you prefer to wash your hands after using washroom?	75 (98.6%)	167 (97.6%)	242 (98%)	
(c)	Do you practice to wash your hands with antibacterial soap after examining the patients?	71 (93.4%)	165 (96.4%)	236 (95.5%)	
(d)	For how long do you wash your hands?	15-20 sec.	40 (52.6%)	75 (43.8%)	115 (46.6%)
		30-60 sec.	36 (47.3%)	96 (56.1%)	132 (53.4%)

Table II shows that an average of 165(67%) medical students had positive attitude towards hand washing with male and female students comprising of 47(62.7%) and 118(69.4%), respectively. Comparison of male to female students was also done for frequency of washing their hands each day. For stated analysis, we gave them three options, namely 3 times, 5 times and more

than 5 times. Interestingly, 49(64.4%) male students and 126(73.6%) female students answered correctly that hand washing should be more than 5 times in a day.

Analysis of Table III reveals that frequency of hand washing practices among medical students on average was 82%. However, we found that only 115(46.6%) on average knew that the minimum correct time for hand washing should be 15-20 sec.

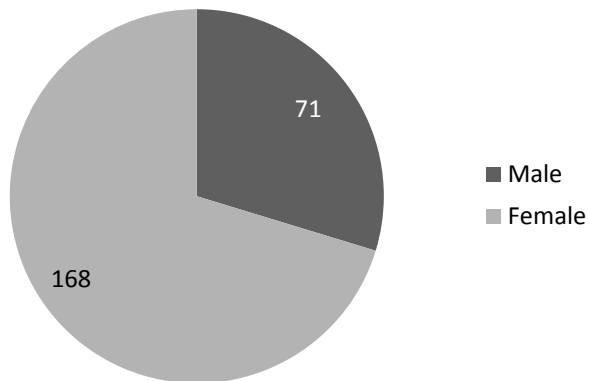


Fig-1: Association between compliance of hand hygiene and control of infectious diseases.

The fig-1 shows that 71(93%) male students and 168(98%) female students replied that there was a positive association between compliance of hand hygiene and control of infectious diseases.

DISCUSSION

Compliance with hand hygiene is the most effective way to reduce the transmission of infections¹¹. At present, when the world is at the increased risk of exposure to harmful and multi-drug resistant infectious micro-organisms, it seems to be very important that each person should consider his/her prime responsibility to adhere with the practices of regular hand washing.

In Asia, there is dearth of studies determining this subject, although the incidence of health care associated infections is high in this region. Most of these studies have explored the KAP survey of doctors as well as of nurses¹². Medical students are the key players in health care providing system. Hence it is imperative that these future health care providers should have adequate knowledge, attitude and practices regarding hand hygiene.

In present study there were total 247 participants: 76 male and 171 female respondents. The survey showed that the knowledge of medical students about hand hygiene was moderate (67%). However, only 66% (164) students were aware about the technique of washing hands including movements of all the fingers and thumb. This showed that there is a need to educate students in term of skill of washing hands using sign charts at important places, short lectures, video clips and seminars to emphasize the importance and steps of hand hygiene.

One such study carried out in Turkey among university students, where the frequency of hand washing was 6-10 times a day. Another study found that only 41.4 % of participants wash their hands 11 times a day which was suggested as the cut off point

for proper hand washing¹³. However, in this study 175 (70%) participants responded that they washed their hands for more than 5 times a day. An unexpected finding was that only few medical students 66 (26%) knew that 20 seconds is the minimum time required for effective hand hygiene. Moreover, 90% students replied that they washed their hands before and after examining the patients during their clinical rounds.

In another study conducted in Syria among hospital staff, majority of respondents (90.6%) were aware of the effectiveness of hand hygiene in preventing hospital associated infections. Even though unaware health care workers reported poor adherence (64%)¹⁴. This study also showed that average percentage of knowledge and attitude toward hand washing among female students was better (69%), than male medical students. Therefore, lack of scientific information has a definite impact of improved hand hygiene on hospital infection rates the same has been reported as a possible barrier to adhere with recommendations.

Considering the importance of hand hygiene in clinico-pathological terms, role of medical students is of prime importance as dealing with patients in their clinical wards exposes them at high risk of transferring and receiving infections by their hands. Our study showed that 90% medical students of Fazaia Medical College practiced hand washing before and after dealing with patients. However, much is needed to be learned in terms of educating students about the technique of hand washing. For this purpose, hand hygiene training sessions may need to be conducted more frequently for medical students with continuous monitoring and feedback to encourage them to follow correct hand hygiene practices that will be beneficial for the medical students as well as patients¹¹.

By emphasizing the importance of hand washing at the basic level of medical students along with various medical settings we can progress for decreasing the number of infections and can also contribute to reduce the resistance of organisms to various anti-microbial drugs. This study also highlights the significance of the simple measure of hand washing as an effective tool towards awareness and practices of students as well as adding towards patient safety.

Moreover, in future, reinforcement of the message using educational platforms of workshops and hands on practices on the principles of hygiene could be conducted in various educational institutions¹⁵ Hence improving the quality of life with required hygienic standards.

CONCLUSION

The medical students of FMC had moderate knowledge and positive attitude towards hand washing practices

AUTHOR'S CONTRIBUTION

Zehra N: Designed Research Methodology

Hashim R: Conceived Idea, Designed Research Methodology

Waseem H: Data Collection, Literature Review, Data Interpretation, Statistical Analysis, Manuscript Writing

Hashim S: Literature Search, Data Collection

Niazi A: Manuscript final reading and approval

Khadija S: Data Interpretation, Statistical Analysis

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