



A CROSS SECTIONAL STUDY ON PERSONAL HYGIENE AND MORBIDITY PATTERN AMONG MEDICAL STUDENTS FROM A PRIVATE MEDICAL COLLEGE, THRISSUR, KERALA.

Community Medicine

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ABSTRACT

Introduction : Personal hygiene and hand hygiene is now regarded as one of the most important element of infection control activities. Being the health care providers who have constant exposure to infections such hygienic practices among medical students are important. The poor personal hygiene contribute to cross transmission of microorganism and occurrence of infectious diseases. Objective: To find out any association between personal hygiene and morbidity pattern among undergraduate medical students Methodology : A cross sectional study was undertaken among undergraduate medical students during 4 week period. The calculated sample size was 300 using the formulae $4 PQ/d^2$. The data was collected using pre-tested self administered questionnaire which contain the details of personal and hand hygiene practices and morbidity pattern in last four weeks. Results: Out of 300 undergraduate medical students included in the study, more than half 178 (59.3%) of them had good personal hygiene and 122 (40.7%) of them had poor personal hygiene. But when hand hygiene practices were assessed, majority 216 (72%) of them had good hand hygiene and only 84 (24%) of them had poor hand hygiene. When the morbidity pattern was assessed 117 (39%) of students had more than two morbid conditions and 150 (50%) of them were suffering from one or two morbid conditions in the past four week. There was a statistically significant association between personal hygiene practices and morbidity pattern among medical students (p value -0.004) Conclusion: The poor personal hygiene practices among medical students contribute to the occurrence of infectious diseases.

KEYWORDS

Hand Hygiene, Medical students, Morbidity pattern, Personal hygiene

INTRODUCTION

Personal hygiene and hand hygiene is now regarded as one of the most important element of infection control activities.[1] Personal hygiene includes – regular washing of body, washing hands when necessary, washing ones clothing, washing the hair, brushing the teeth, cutting nails etc.[2]. Personal hygiene is a concept that is commonly used in medical and public health practices. It is personal. It is defined as a condition promoting sanitary practices to self. The knowledge and practice of personal hygiene are vital in all our everyday activities. The public health purposes of personal hygiene include the prevention of faeco-orally transmitted diseases, aesthetic values and social impact. Hands have been identified as the major source of germ transmission while providing healthcare. World Health Organization (WHO) has defined certain guidelines on how to perform hand hygiene. Alcohol based formulation is preferred for routine hygienic disinfection if hands are not visibly dirty. Compared to hand washing with soap and water it is not only more rapid but also better tolerated by hands.[3] Klebsiella species, Clostridium difficile, MRSA, gram negative bacteria are some of the organisms that are likely to found on health care workers hands. However direct patient contact is not the sole method of pathogen transmission. Pathogens can also be acquired on the worker's hands by touching contaminated surfaces in patient's environment.[4]. WHO has introduced an evidence based concept of 'My five moments for Hand hygiene' [5] that include – before touching a patient, before clean /aseptic procedures, after body fluid exposure / risk, after touching a patient and after touching patient's surroundings.

In a study conducted among high school students of a rural area in Karnataka, India about the personal hygiene practices 42.3 % had good hygiene practices. Girls comparatively had better hygiene practices than boys and higher maternal education had better hygiene practices. Students who had awareness regarding diseases transmitted by poor personal hygiene had better hygiene practices. [6] Similar study conducted about morbidity pattern and its association with personal hygiene practices among school going children in Gujarat, India showed 49.8% of students had knowledge regarding health related problems and about 24.4% of children had health related problems. [7] In a study done among medical students of a Rural medical college in West Bengal, India 97.01% students washes hands after going to toilet, 94.03 % washes hand before having food and 96.52% washes hands after clinical / practical classes. 20% of students do not wash hands after excretion had some kind of gastrointestinal disorders. 24.88% students suffered from illnesses during preceding four weeks of study [8]

In spite of being a very simple action, compliance with hand hygiene among health care providers is as low as less than 40%. To address the problem of lack of compliance with hand hygiene continuous efforts are being made to identify effective and sustainable strategies [9] Studies on association between personal hygiene, hand hygiene and morbidity patterns among medical students can give details about the present scenario and help to implement new measures to improve such practices among medical students. This can also help in the prevention of spread of communicable diseases. Such studies are important as medical students in their clinical training phase can potentially transmit infections, besides being the health care providers of future when their pattern of training will reflect on their infection control practices. Thus the main objective of the study is to assess the personal hygiene practices and morbidity pattern among undergraduate medical students and to find out any association between them.

METHODOLOGY

A cross sectional study was conducted among undergraduate medical students from our medical college during August 2019 to October 2019. Sampling was done using consecutive sampling technique. Sample size was calculated by formula $4 PQ/d^2$ where P is 24.88% is the proportion of medical students who suffered from some illness in last 4 weeks in a study conducted among Medical students in West Bengal.[8], and $q=100-p$, $d=20\%$ of p. Calculated minimum Sample size was 300. All undergraduate students of 2nd, 3rd, 4th year are included in study as they are constantly going to ward and has contact with patients. A pre tested self-administrated questionnaire is distributed which contain questions on personal hygiene, hand hygiene and morbidities in last 4 weeks. Questionnaire is divided into 4 sections. First section contain information socio demographic details of students. The second section contain questions on personal hygiene, third section contain questions on hand hygiene and fourth section contain questions on morbidities. Personal hygiene was assessed from the habits of bathing, brushing, trimming nails, washing hair, changing clothes, washing apron and washing mouth after eating snacks. The hand hygiene was assessed among the students based on the five moments of WHO hand hygiene practices. (5) The personal hygiene and hand hygiene sections contain 7 questions and a total of 21 questions. Each question in section of personal hygiene and hand hygiene contain scores ranging from 0 to 2. The 0 score corresponds to never practicing, score 1 corresponds to sometime practicing and score 3 corresponds to practicing regularly. Total score ranges from 0 to 14 in both section. A score of 0 to 7 is considered as poor hygiene and a score of 8 to 14 is considered as good hygiene. The data was entered and coded in Microsoft excel and SPSS software was used for analysis. The

institutional ethical clearance was obtained before the start of study.

RESULTS

300 students were included in the study among which 84(28%) were males and more than half of them 216(72%) were females. The mean age of students is 21.74 + 1.05. Minimum age is 19 and maximum age is 24. Religion wise 98(32.7%) of the students were Hindus, 164(54.7%) were Christians and 28(12.7%) of them were Muslims.

More than half 178(59.3%) of the students had good personal hygiene and 122(40.7%) of them had poor personal hygiene. (Fig 1) It was observed that 56(18.7%) of students always bath twice daily, 77(25.7%) of the students always brushed twice daily. Trimming nails is part of good hygiene as untrimmed nails transmit several diseases. On assessing the practices of trimming nails weekly 85(28.3%) of them said they always trim their nails weekly. 148(49%) of them always washed their hair daily, 162(54%) of the students changed their clothes daily. Apron worn by medical students is also considered as a good source of pathogens. Frequency of washing aprons were assessed and it was found that 86(28.6%) always washed their aprons weekly. Regarding the practice of washing mouth after eating snacks 123(41%) of them does this always.. Personal hygiene practices are shown in Table 1

Figure: 1 Distribution of study population according to their personal hygiene Practices

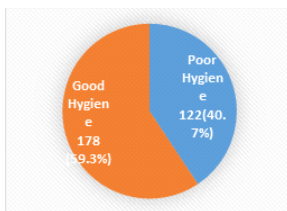


Table: 1 Personal Hygiene practices of study population

Personal hygiene practices	Less often N (%)	Mostly N (%)	Always N (%)
Bath Twice daily	175 (58.3%)	69(23%)	56(18.7%)
Brush teeth twice daily	139(46.3%)	84(28%)	77(25.7%)
Trim nail weekly	93(31%)	122(40.7%)	85(28.3%)
Hair wash daily	56(18.7%)	96(32%)	148(49.3%)
Change clothes daily	39(13%)	99(33%)	162(54%)
Washing apron weekly	39(13%)	99(33%)	162(54%)
Washing mouth after taking snacks	45(15%)	132(44%)	123(41%)

Hand hygiene was assessed similar to personal hygiene and it was seen that majority of the students that is 216(72%) had good hand hygiene and 84(28%) of them had poor hand hygiene. (Fig 2) Regarding the practice of washing hands with soap and water after going to toilet it was seen that 182(60.7%) of the study population always washed their hands after going to toilet. On assessing the practices of washing hands before food it was seen that only 50(16.7%) of students always washed their hands with soap and water before having food. The study also revealed that 32(10.7%) of students always washed their hands before touching patients and 188(62.7%) of them always washed their hands after touching patients.(Table 2).In this study it was observed that 142(43.7%) students were aware that minimum 20 seconds time is needed for alcohol based hand rub to kill most germs on hands.

Figure: 2 Distribution of study population according to hand hygiene practices

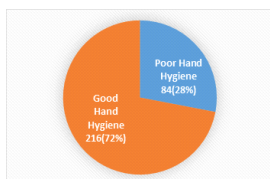


Table: 2 Hand Hygiene practices of study population

Washing hands with soap and water	Less often N (%)	Mostly N (%)	Always N (%)
After defecation	25(8.3%)	93(31%)	182(60.7%)
Before food	124(41.3%)	126(42%)	50(16.7%)
Before touching patients	159(53%)	109(36.3%)	32(10.7%)
After touching patients	15(5%)	97(32.3%)	188(62.7%)
Patients belongings	72(24%)	131(43.7%)	97(32.3%)
After clinical postings	38(12.7%)	123(34.3%)	142(47.3%)

The study also assessed the morbidity pattern of the study population during past 4 weeks. Out of 300 students 174 suffered from dandruff/lice, 159 had upper respiratory tract symptoms, 121 had fever, 76 had loose stools, 63 had dental carries, 46 had skin diseases and 21 had vomiting. 117(39%) of the students had more than two symptoms, 150(50%) of the students had one or two symptoms and 33(11%) had no symptoms. Among the students with more than 2 symptoms 58(49.6%) have poor personal hygiene and 40(34.2%) have poor hand hygiene. Among students with no symptoms only 6(18.2%) have poor personal hygiene and 7(21.2%) have poor hand hygiene (Table 3). A statistically significant association was found between personal hygiene and morbidity pattern in the study population (p value=0.004)

Table: 3 Association between personal hygiene and morbidity pattern of study population

Parameter	Classification	Symptoms			Total N=300	Statistical Significance
		No symptoms N=33	One or two symptoms N=150	More than 2 symptoms N=117		
Personal Hygiene	Poor Hygiene	6 (18.2%)	58 (38.7%)	58 (49.6%)	122 (40.7%)	Chi-square value-11 P value -0.004
	Good Hygiene	27 (81.8%)	92 (61.3%)	59 (50.4%)	178 (59.3%)	
Hand Hygiene	Poor Hand Hygiene	7 (21.2%)	37 (24.7%)	40 (34.2%)	84 (28%)	Chi-square value-3.80 P value -0.14
	Good Hand Hygiene	26 (78.8%)	113 (75.3%)	77 (65.8%)	216 (72%)	

DISCUSSION

Brushing teeth at morning is desirable but brushing both at morning and after dinner is recommended to prevent dental carries. In our study 25.7% students said that they always brush twice daily and 28% of students said that they mostly brush twice daily. Regarding the practice of nail trimming 28.3% students always use to trim their nails weekly while 40.7% of students mostly trim their nails weekly. In a study done at West Bengal 21.9% of them used to brush twice daily and 50.25% of students used to trim nails weekly.(8) It was observed that 16.19% of students had cough, cold or fever, 5.24% had diarrhoea or vomiting, 1.9% had skin diseases in preceding four weeks.

In the present study 60.7% students always wash their hands after going to toilet, 16.7% students always wash their hands before taking food, 46.3% of the students always wash their hands after clinical or practical classes. On assessing the disease that students had during last four weeks in our study it was seen that 53% of them had cough or running nose, 40.3% had fever or throat pain, 25.3% of them had loose stools, 7% of them had vomiting and 15.3% of them had some kind of

skin disease. A statistically significant association was found between personal hygiene and morbidity pattern among the study population. In a study done among 200 medical students in Ranchi 100% students washed their hands after going to toilet, 94% of students washed their hands before taking food and 94% students washed their hands after clinical or practical classes. In their study 30.5% of students had diarrhoea, 3.3% of them had dysentery, 19.5% of them had vomiting, 2% of them had skin infections and 37% of them suffered from some respiratory illnesses during last six months. (10)

In a study done among medical students in West Bengal (11) 38.95% students received formal training in hand washing and 49.47% students were using alcohol based hand rub routinely. 44.21% students correctly responded that health care worker's unclean hands are the main route of cross transmission of potentially harmful germs between patients in health care facilities and only 25.26% students were aware that germs always present on or within the patient are the most frequent source for health care associated infections.

In a similar study done in West Bengal 97.01% (8) of students wash their hands after going to toilet, 94.03% wash their hands before taking food and 96.52% of students wash their hands after clinical or practical classes. In our study 47.3% of students were aware that minimum 20 seconds is the required time for alcohol based hand rub to kill germs on hands. In a study done in a tertiary care hospital in West Bengal (11) regarding the knowledge of hand hygiene, 42.11% students correctly answered 20 seconds as the minimum time required for an alcohol based hand rub to kill most germs on your hands

CONCLUSION& RECOMMENDATION

The present study concludes that the majority 72% of undergraduate medical students have good hand hygiene practices, but only 59.3% of them had good personal hygiene. There is association between personal hygiene and morbidity pattern. Personal hygiene topic must be emphasized in medical education to understand the importance of it and convert it in practice in their daily life. The improved understanding of infection control and personal hygiene among students is expected to play a major role in curbing disease transmission.

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