IJBPAS, June, 2021, 10(6): 1924-1931

ISSN: 2277–4998

International Journal of Biology, Pharmacy and Allied Sciences (IJBPAS)

'A Bridge Between Laboratory and Reader'

www.ijbpas.com

KNOWLEDGE, ATTITUDE & PRACTICE OF HAND HYGIENE AMONG MEDICAL STUDENTS / PRACTITIONERS – A SURVEY

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Received 15th July 2020; Revised 13th Aug. 2020; Accepted 25th Sept. 2020; Available online 1st June 2021

https://doi.org/10.31032/IJBPAS/2021/10.6.5517

ABSTRACT

Hand hygiene is considered one among the foremost vital infection management methodology for preventing health care-associated diseases. Hands are the primary source of germ transmission during health care services. While the measures involved in hand hygiene are clear, the enforcement required for hand hygiene is poor worldwide. There are possibilities of transmitting infections because of not knowing the importance of maintaining proper hand hygiene. This is because of the lack of knowledge in following the steps for prevention of diseases transmitted through hands. The study was undertaken in order to ascertain the knowledge, attitudes, and practices (KAP) study on hand hygiene among medical practitioner who are in clinical practise around south Tamilnadu were chosen. This cross-sectional study was conducted among a total of 180 dental professionals &medical practitioners in tamilnadu. Among the respondents87.9% of the participants has complete knowledge in hand hygiene. Around 87.7% of them accepted that following proper hand hygiene could prevent from bacterial transmission, 81.5% of the chart showed that there is an effect in using hand rubs for a time limitation which can prevent from microorganism transmission. The study also shows that our participants have poor knowledge about the effect of hand rubbing and have the thought that using alcohol rubs lead to intense staining. This research highlights the need for training programs amongst all medical professionals on hand hygiene activities to include existing awareness in the field with a behavioural shift in attitude and procedure that leads to a decline in the outbreak of nosocomial infections.

Keywords: Attitude, Knowledge, Hand wash, hygiene, infection

INTRODUCTION

Worldwide, the impact of disease caused by microorganisms places a drastic ill effect on the health of the mankind., especially starting from very dangerous cancer to common cold are mainly due to infection of microorganism. Apart from these, globally thousands of people die every day due to infections acquired through health care procedures, which mainly spreads or transmit through contamination in air, water, environment and unhygienic practise or careless habits **[1]**.

The use of hand hygiene is the primary method to minimise infection is unlikely to work if other considerations in the prevention of infection, such as occupational hygiene, crowding, staffing and schooling, are insufficient. Usually the health care-associated transmission of pathogens most common is through infection or draining wounds, colonized areas of patients contact such as skin, dress, bed linen, especially the objects in the immediate environment of the patient **[2]**.

Even if handwashing with an antiseptic agent between patient contacts is theoretically acceptable, handwashing with soap, water and mechanical friction is necessary to eliminate the most peripherally acquired microbes. Antiseptic agents can create overly dry skin when used regularly, and any handwashing regimen lead to dermatitis contradicts the purpose of handwashing **[3]**.

Mostly the causative agents for the transmission of diseases is by *Staphylococcus aureus, Proteus mirabilis, Klebsiella spp*., *Acinetobacter* spp., *Enterococci*, or *Clostridium difficile* which play an important role in health care associated infections (HCAIs) **[4]**. Most dreadful disease can be eliminated from the environment by simple solution such as changing habits including practicing hand hygiene (HH), by washing the hands with merely water and soap or alcohol-based hand rub **[5]**. In spite of treating the patients either directly or indirectly, any medical practitioners should be aware of importance of hand hygiene **[4, 6]**.

While several countries have recommendations for hand hygiene in healthcare facilities, average implementation among healthcare workers remains low. Improving hand hygiene remains a problem for health care institutions and the society to control infections. Hand hygiene recommendations concern health care institutions in developing countries. Transmission of infectious disease remains a major concern, particularly in high - risk settings such as hospitals, the risk of emerging diseases in

developing countries remain extremely high.

The highly unfavourable condition prevails among the educated health workers, who showed compliance due to several barriers such as high work load, working status, unaware of implementation of clinical guidelines **[1, 7, 8]**. With these few back drop of information, despite the high prevalence of HAIs in Asian countries has led to assess this issue in the present study.

This study was designed in such a way to verify the knowledge, attitude and practise on hand hygiene of health practitioners. The study was conducted mong medical practitioners in and around Chennai which included various specialists who are clinically practising and once survey was done data were collected and statistical analysis was done and the final result was calculated. The results showed on how hand hygiene practise was carried out as per individuals.

MATERIALS AND METHODS

Research design and setting

This cross-sectional survey was conducted among dentists and medical practitioners in and around Chennai, Tamilnadu, India.

Participants

The criteria which are inclusion in the present study were practitioners in a clinical setup and willingness to participate in the study. An exclusion criterion includes incomplete questionnaire or individual reluctance for participation. The participants were given full freedom to respond or reject the questions ie., unbiased in nature.

Sampling

According to the estimated sample size, 180 Medical & Dental practitioners were selected by simple random sampling method. The survey were conducted in online mode using google forms send through what's up or E mail Id after getting initial acceptance to response. Sampling continued until achieving the minimum sample size as per **[9]**.

Data Collection

The data on personal data on knowledge on hand hygiene was collected using Questionnaire generated using google form. The data includes information on age, gender, nature of profession or course and the total of 17 questions were postulated related to hand hygiene. Overall scores were expressed in percentage; so that an overall score of variables of >75% was considered as good, 50–74% as moderate and <50% as poor knowledge. The questions were mainly of ordinal type to facilitate easy response. The questions were dispersed to assess the route of transmission, knowledge on hand wash includes hand washing and hygiene, usage of sanitizer, impact of water & alcohol

based hand cleaning, sequence of hand wash and time limitation.

Ethics

Medical students and dental students were explained the content and nature of the study. Verbal consent was obtained from the participants.

Statistical analyses

Statistical analyses were carried out using the SPSS statistical software package (Version 23.0 for Windows). A p-value of 0.05 was regarded as the level of statistical significance (two-tailed).

RESULTS AND DISCUSSION

A total of 180 practitioners were invited to participate in this study. The questionnaire survey were responded by the medical practitioner and students , mostly Doctor, Dental post graduate, pursuing MBBS, Physician, DGO etc., Among the participants 40.9% were male and 59.1% were female, which shows the responsibility of women in heath care. Among the frequency of respondents, doctors (general) and medical students were observed to be higher in responding the questionnaire **(Figure 1)**. **Figure 2** depicts the percentage of respondent irrespective to the sex. It shows that irrespective to the sex the contribution of student communities especially teenage was observed to be higher than other age category, followed by male (above 50 years). There is no significant difference among the sex in responding the survey (R^2 = 0.283). In the present study the questionnaire after were target to survey for 200 practitioners but only 180 practitioners accepted and responded to participate in this study. The questions were framed in categorical variables and the overall results were shown in **Figure 3**. An overall of 87.4% of participants accepted that the chances of transmission of harmful infections through patients are possible. Around 87.7% of them accepted that following proper hand hygiene could prevent from bacterial transmission, 81.5% of the chart showed that there is an effect in using hand rubs for a time limitation which can prevent from microorganism transmission. Around 86.2% of the participants accepted that they follow correct protocol for HH. According to the analysis, 87.9% of the participants has complete knowledge in hand hygiene. Among the variable or survey questions the impact of accessories and sequence on hand wash has more awareness among the participants and least awareness was noted in role of wearing gloves and its impact in hand wash. The knowledge and attitude on source of transmittance of disease and frequency of hand wash was less among the practitioner **(Table 1)**.

The present study shows that the sampling groups have good knowledge in HH. The mean knowledge level in our study is higher compared to some similar studies in developed countries **[10]** . As previously reported by **[11]** , training had no effect on knowledge level. Another study by **[12]** is also showed that 75% of the participants had good knowledge. In the present study there occurs a negative correlation between the degree of responds (r=-0.316) and a positive and very slight correlation between unawareness and unresponsiveness (r = 0.2645) is noted similar to the work of **[13]**, a negative relationship was reported between professional education and the rate of hand washing compliance.

It seems that HH knowledge is considered more serious in nursing curriculums compared to medical students. This study highlights the importance of improving the current training programs targeting HH knowledge among medical students. According to our study the mean knowledge level was high for 95% medical professionals. Our results noted no difference in HH knowledge between men and women. The result is the same with some other studies that revealed that the overall score in knowledge did not differ between male and female nurses inspite of gender difference in the hand wash hygiene practise and attitude **[14, 15]** . A more detailed view showed that our participants have poor knowledge about the effect of hand rubbing and have an exaggerated belief about its side effect (skin dryness). The present study is a cross-sectional study and inherently has its own limitations. Our sample distribution was not uniform in the field of medical & dental. The main cause was the difference of the staff numbers and also cooperation of the staff. The strength of the study was assessing the knowledge level of different occupations in a hospital unit with different education levels and curriculums.

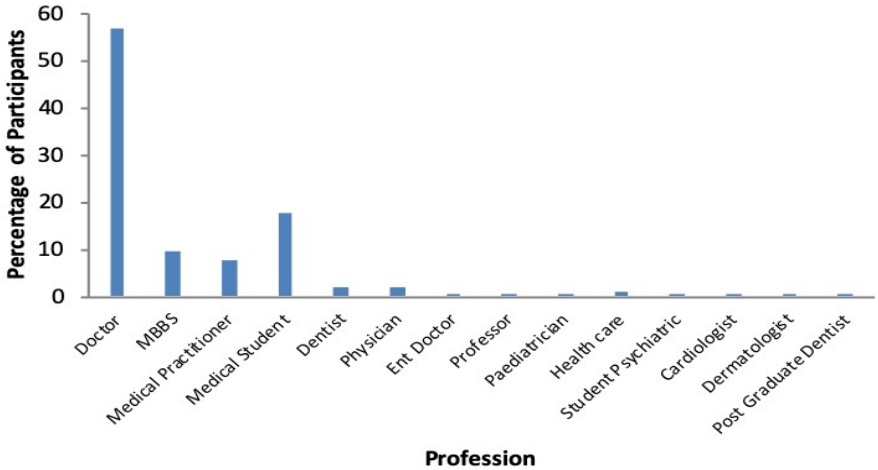

Figure 1: Profession of the respondents

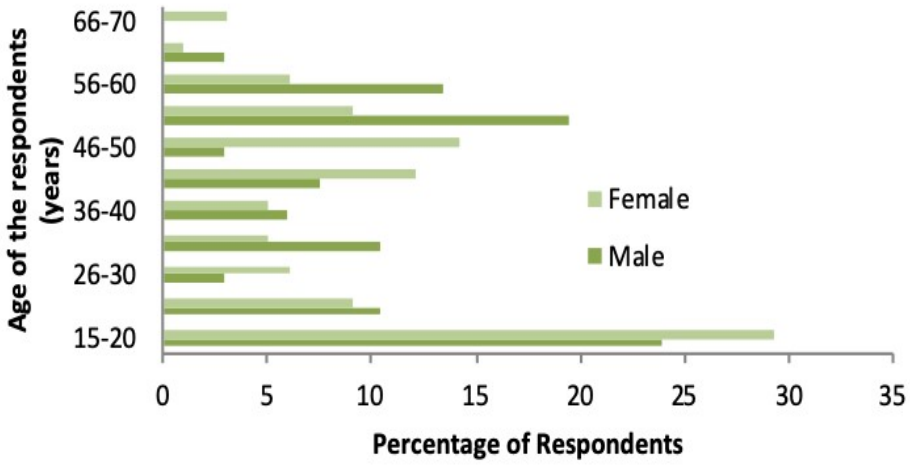

Figure 2: Age-wise percentage of respondents

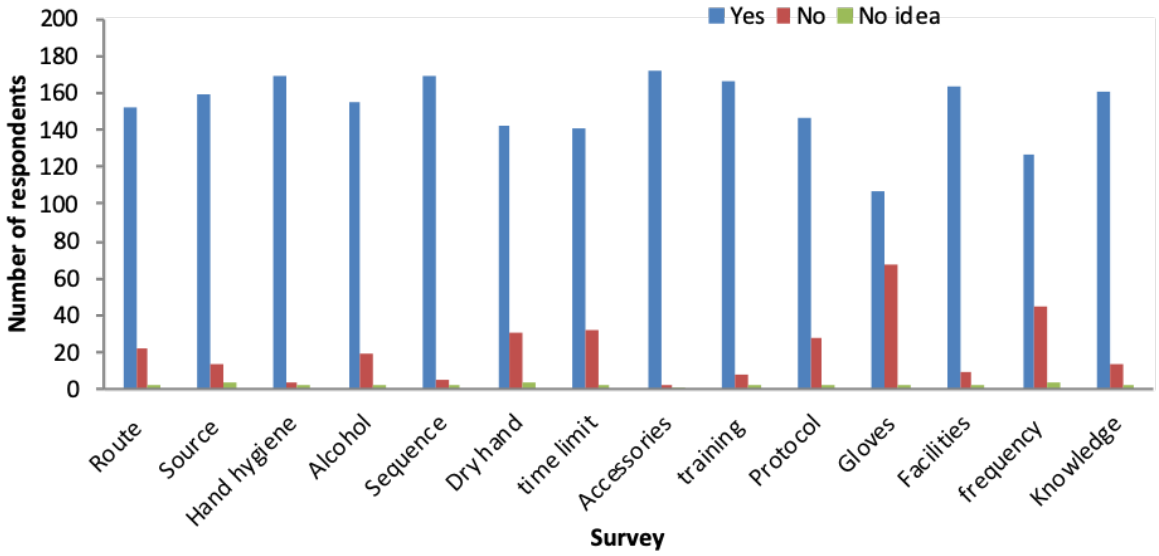

Figure 3: Response to the survey questions

Table 1: % Attitude of Respondents towards hand wash

Survey	Accept	Unaware	No idea
Route	86.36364	12.5	1.136364
Source	90.34091	7.386364	2.272727
Hand hygiene	96.02273	2.272727	1.704545
Alcohol	88.06818	10.79545	1.136364
Sequence	96.02273	2.840909	1.136364
Dry hand	80.68182	17.04545	2.272727
time limit	80.11364	18.18182	1.704545
Accessories	97.72727	1.704545	0.568182
training	94.31818	4.545455	1.136364
Protocol	82.95455	15.90909	1.136364
Gloves	60.45198	38.41808	1.129944
facilities	93.18182	5.681818	1.136364
frequency	72.15909	25.56818	2.272727
Knowledge	91.47727	7.386364	1.136364

CONCLUSION

The present study highlighted the importance of hand hygiene in day to day practise among the medical practitioner. Emphasising and hygiene training programs in medical students is one important issue that should be considered more seriously.

Acknowledgements:

The authors would like to acknowledge the help and support rendered by the department of Oral Pathology of Saveetha Dental College and Hospitals and the management for their constant assistance with the research.

Authors' Contributions:

Dr. Mithra. S framed and obtained data related to this work. Dr. Pratibha Ramani reviewed the datas and other required inputs for designing the manuscript. The methodology and results were discussed by all other authors and contributed to the final manuscript.

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