SELF-REPORTED HAND HYGIENE PRACTICES AMONG DENTISTS IN VARIOUS DENTAL INSTITUTES OF PAKISTAN

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ABSTRACT

Proper hand hygiene is acknowledged as the most critical element of an adequate infection control program in the oral health care setting. This cross-sectional (KAP) study was carried out to assess the self-reported knowledge, attitudes and practices of dentists regarding Hand Hygiene from Various Dental institutes of Pakistan (Armed Forces Institute of Dentistry, Rawalpindi, Islamic International Medical & Dental College Islamabad, Nishtar Institute of Dentistry Multan and Liaquat College of Medicine & Dentistry, Karachi, Pakistan) from July 2014 to December 2015.

A total of 187 dentists including consultants, post graduate residents and house surgeons were included in the study by Non probability consecutive sampling. A self reported questionnaire derived from conducted survey by Myers R et al.3 were used to collect data.

At the start of the practice day, forty three percent of participants always washed with antimicrobial soap but never disinfected with an alcohol-based hand sanitizer. Thirty six percent often/almost always washed with antimicrobial soap and disinfected with alcohol-based hand sanitizers. About one third were comfortable with their hand hygiene practices, regardless of what the CDC Hand Hygiene guideline Recommends. Most dentists used soap and water for HH frequently, and a smaller number use alcohol-based hand sanitizers for HH frequently. Further education of the dental community is warranted to improve HH compliance, efficacy of HH practices.

MeSH Key Words: Cross infection control, Hand hygiene (HH), HH behavior, HH practices.

INTRODUCTION

Health-care workers are at risk for blood-borne, airborne, and droplet-spread transmission of infectious agents because of their frequent and often intensive occupational exposures that include percutaneous injury, contact of mucous membrane or non-intact skin with blood or other body fluids that are potentially infectious. They may also act as potential vectors for nosocomial transmission of several infections to patients and other close contacts.1

Proper hand hygiene is acknowledged as the most critical element of an adequate infection control program in the oral health care setting. However, adherence to proper hand hygiene protocols is often lacking. Poor compliance with hand hygiene protocols has been attributed to such factors as lack of time, hand irritation, hand dryness, forgetfulness, skepticism over importance, understaffing, perceived low risk of cross-infection, inconvenience, and the belief that gloves alone offer protection. In the medical environment, the use of alcohol-based hand rubs now represent the preferred method of performing hand hygiene when delivering nonsurgical care.2

Washing hands with soap and water has been the primary method of hand cleansing. In 2002, however, the Centers for Disease Control and Prevention (CDC) published Guideline for Hand Hygiene in Health-Care Settings, which included several new evidence-based practices such as an alcohol-based hand sanitizer to replace traditional hand washing for all patient contacts except if hands are visibly soiled.3
The World Health Organization (WHO) launched the global hand hygiene campaign in 2004 to improve hand hygiene compliance, which included five indications of before patient contact, before an aseptic task, after body fluid exposure risk, after patient contact and after contact with patient surroundings.4

Hand hygiene is the most effective measure for interrupting the transmission of microorganisms which cause infection both in the community and in the healthcare setting. Using hand hygiene as a sole measure to reduce infection is unlikely to be successful when other factors in infection control, such as environmental hygiene, crowding, staffing levels and education are inadequate. Hand hygiene must be part of an integrated approach to infection control.5

The guideline for HH in healthcare settings provides the healthcare workers (HCWs) with a review of data regarding hand washing and hand antisepsis in healthcare settings. In addition, it provides specific recommendations to promote improved HH practices and reduce the transmission of pathogenic microorganisms to patients and personnel in healthcare settings.6 The aim of this study was to determine the self-reported knowledge, attitudes and practices of dentists regarding Hand Hygiene to promote improved HH practices and reduce the transmission of pathogenic microorganisms.

METHODOLOGY

This cross-sectional Knowledge, Attitudes and Practices (KAP) study was carried out in Armed Forces Institute of Dentistry, Rawalpindi, Islamic International Medical & Dental College, Islamabad, Nishtar Institute of Dentistry, Multan and Liaquat College of Medicine, & Dentistry, Karachi Pakistan from July 2014 to December 2015. A total of 187 dentists including consultants, post graduate residents and house surgeons were included in the study by Non probability consecutive sampling. A self reported questionnaire derived from conducted survey by Myers R et al3 were used to collect data. A verbal informed consent was taken from participants after detailed explanation of research procedure. Data collected recorded through Questionnaire about Hand Hygiene practices and products they use, the condition of the skin on their hands, their attitude towards Hand Hygiene practices and Hand Hygiene guidelines. Subjects rated their attitudes by using a four-point Likert scale, in which 1 was equated with “strongly agree” and 4 with “strongly disagree.” The data were analyzed by SPSS (version 20). Descriptive statistics used to describe the data in frequencies and graphs.

RESULTS

In the present study, a total of 187 dentist included in which antimicrobial soap with water was the most commonly used product in the practice setting, almost (43%) using it. While 36% dentist using both antimicrobial soap and hand sanitizer as shown in Fig 1. Results in Fig 2 refer to self-reported HH behaviors. Sixty subjects (32%) reported they never/almost never wash their hands with soap or disinfect with an alcohol based hand sanitizer at the start of the practice day. One hundred and eight subjects (58%) always washed with soap or disinfected with an alcohol-based hand sanitizer at the start of the practice day.
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patterns of combined soap and alcohol-based hand sanitizer usage occurred before first patient after tea break and end of last patient.

One forty two subjects who responded (76%) reported having normal skin condition in term of intactness and sensation while forty subjects (21%) had instances of hand irritation. In addition, they were asked about the current condition of their skin, as shown in Fig 3. The other problematic area with respect to hand condition was amount of moisture; 118 subjects who responded (63%) reported having normal moisture, and 66 subjects who responded (35%) reported having dry skin.

We also asked subjects about their attitudes toward statements concerning HH. Almost all subjects agreed that HH prevented the spread of infection, with 145 (78%) strongly agreeing that it prevents the spread of infection to patients and 136 (72%) strongly agreeing that it prevents the spread of infection to self and their families (Table 1). Participants with good/excellent knowledge of the Centers for Disease Control and Prevention (CDC) Guideline for Hand Hygiene in Healthcare Settings were more likely to report acceptable HH behavior. About one third (34%) were somewhat agree with their hand hygiene practices, regardless of what the CDC Hand Hygiene guideline Recommends.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Somewhat Agree</th>
<th>Somewhat Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>HH prevents spread of infection to patients</td>
<td>78</td>
<td>16.5</td>
<td>2.5</td>
<td>2.0</td>
</tr>
<tr>
<td>HH prevent spread of infection to self and family</td>
<td>72.7</td>
<td>19</td>
<td>5.8</td>
<td>2.5</td>
</tr>
<tr>
<td>My patients prefer to see me hand wash with soap and water</td>
<td>57.1</td>
<td>36.5</td>
<td>9.2</td>
<td>11.4</td>
</tr>
<tr>
<td>I have access to necessary supplies / equipment to use CDC Hand Hygiene guideline Recommendations</td>
<td>23.8</td>
<td>35.9</td>
<td>27.6</td>
<td>12.7</td>
</tr>
<tr>
<td>I am comfortable with my hand hygiene practices, regardless of what the CDC Hand Hygiene guideline Recommends</td>
<td>23</td>
<td>34.4</td>
<td>26.2</td>
<td>16.4</td>
</tr>
</tbody>
</table>

DISCUSSION

Hand hygiene is the single most important procedure in preventing nosocomial infection. Hand washing with soap and water or alcohol-based hand rub has long been considered one of the most important infection control measures to prevent healthcare-associated infections. However, compliance by healthcare workers with recommended hand hygiene practices is unacceptably low, with compliance rates generally below 50% of hand hygiene opportunities. Among the six hand hygiene indications, after body fluid exposure risk, before an aseptic task, after contact with patient surroundings and after removing gloves showed higher compliances ranging 87.7-100%, 87.4-100%, 84.6-100% and 82.9-97.2%, respectively. However, the compliance of indications such as before patient contact and after patient contact were extremely low, only 22.4 and 37.0% of hand hygiene opportunities were detected to perform hand hygiene. The most important cause of the difference may attribute to the less attention to hand hygiene in the clinical practice similar results were found in the present study.

Dental healthcare workers skin could transiently carry potential pathogens coming from the environment and the use of gloves does not automatically eliminate the need for hand washing, because gloves can have unapparent defects or can be torn during use, due to sharp equipment, widespread in dental healthcare. Subjects who were less familiar with the CDC HH guideline were more likely to report that their hands were in poor condition. Results of other studies have demonstrated that HH with an alcohol-based product is associated with significantly healthier skin. In a previous study, self-reported reasons for frequent lack of compliance included the following: Hand washing agents cause skin irritation and dryness; lack of soap or too busy/hand washing takes too long; wearing of gloves; hands do not look dirty; and a perceived low risk of acquiring infection from patients. In contrast, most dentists in the present study reported that they were not too busy for HH, and that adequate hygiene with traditional hand washing with antimicrobial soap maintained the skin condition of hands with in the normal range except loss of skin moisture. Other health care professionals have reported for years that these types of barriers are deterrents to HH and to adhering to practice guidelines.
Another studies indicated that dental practitioners have generally positive attitudes toward HH, that ways to improve HH practices of a relatively small group of practitioners need to be found, and that their knowledge about the CDC HH guidelines needs to be improved. Also, 36% of subjects in the study stated that they agreed or strongly agreed that they were comfortable with their current HH practices, regardless of the guidelines. As much as 74.10% of dentists expressed concern about the risk of cross-infection from the patients to themselves and their dental assistants. Forty-three percent of the participants were able to define “cross-infection” correctly. The dentists were asked about universal precautions and their behaviors. The greatest majority of them (95.60%) stated that all patients have to be accepted as being infectious and universal precautions must apply to all of them. We also found similar response regarding HH behavior but higher percent 58% were comfortable with their current HH practices.

Few studies have been conducted to assess the costs of guideline development and implementation, and some practice guidelines have been implemented without concomitant assessment of patient outcomes and the costs and benefits of changes in care. There is a lack of knowledge among dentists regarding proper hand hygiene. For the benefit of both the patient and the doctor, this situation must be remedied.

These routine procedures would include the majority of general dental procedures such as conducting oral examinations and placing restorations and surgical procedures with a low risk of causing infectious transmission. Critical surgical procedures that routinely penetrate a normally sterile site require the elimination of the transient microflora and a reduction in the resident microflora because these procedures carry a much higher risk of transmitting infectious bacteria. The clinician can accomplish this surgical antisepsis before donning sterile gloves by using soap and water followed by an alcohol-based hand sanitizer with persistent activity or by using antimicrobial soap and water. Extending continuing education and strict audit is needed in the dental setting to ensure compliance with infection control guidelines and to provide enduring knowledge.

In general, the dentists in our study reported attitudes toward HH that were positive, but their familiarity with the CDC HH guideline was not uniformly good. On the basis of our study results, we found that it is important to standardize guidelines for Dentists to increase their knowledge, as well as to create a practical guide to improve the HH process and guideline compliance.

CONCLUSION & RECOMMENDATIONS

On the basis of survey results appropriate measures should be taken to review and more structured incorporation of hand hygiene measures and guidelines in Pakistan keeping in view dental practices. In addition, a high compliance with infection control procedures is the key to quality care and excellence in dental practices. Results of was study provide insights for the development of a targeted education and training strategy to enhance compliance of dental community, with infection control procedures.

The improvement of hand hygiene compliance is a worldwide program, and the promotion of hand hygiene behavior needs a long-term effort. Though training is the most basic intervention element, surveillance, evaluation and feedback should be explored as additional interventions to ensure that hand hygiene compliance is achieved and sustained at high levels.

It is a high time that HH promotion should be made a priority for public health and health care policymakers, medical and nursing schools, chief medical, and executive officers. The improvement in HH is feasible, affordable, and effective in a healthcare setting with limited resources. The WHO strategy represents evidence-based, ready-to-use solutions for planning and supporting HH promotion in healthcare facilities worldwide, including developing countries. However, the adoption of such a strategy on a national scale is the need of hour for patient’s safety and infection control.

REFERENCES

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CONTRIBUTIONS BY AUTHORS

1 Muhammad Abdullah Kamran: Topic concept, supervision
2 Rabia Shafique: Statistical analysis, data collection
3 Muhammad Amjad: Paper writing
4 Azad Ali Azad: Mentor, proof reading