



CODEN [USA]: IAJPB

ISSN: 2349-7750

**INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES**

SJIF Impact Factor: 7.187

<http://doi.org/10.5281/zenodo.3959913>Available online at: <http://www.iajps.com>

Research Article

**PERFORMANCE AND KNOWLEDGE OF DENTAL
STUDENTS WITH RESPECT TO CONTROL OF INFECTION
GUIDELINES IN NISHTAR INSTITUTE OF DENTISTRY**Dr. Baitullah¹, Dr. Shahid Khan², Dr Sidra Shireen³¹ Nishtar Institute of Dentistry, Multan² de'Montmorency College of Dentistry, Lahore³ Punjab Medical College, Faisalabad

Article Received: May 2020

Accepted: June 2020

Published: July 2020

Abstract:

Dentists are exposed to infectious diseases, and if infection control guidelines are not applied correctly, dental offices can serve as a source of infection. Adherence to infection control rules can help prevent infection of the disease. In this study, information and performance of dental students were evaluated in infection control rules at Department of Dentistry.

Place and Duration: This practical, analytical and transverse study was conducted among dental students at the Nishtar Institute of Dentistry, Multan for six months duration from September 2019 to February 2020.

Methods: This study was conducted on 87 dental students. The data was collected using a survey of 9 questions and a checklist of 16 items. The data was analyzed using SPSS version 21 and identifying statistics using average and standard deviation (SD), t-test, Ki square test, Kruskal Wallis test, and Spearman correlation coefficient.

Results: The severity level is set to P-0.05. 100% of participants wore sterile gloves and changed them for each patient, collected and disposed of waste after examining or treating each patient, blocked the needle after an anesthetic injection and changed the tip of tooth extraction; 94% wore masks and changed them for each patient; 89% wore clean white capes. It was found that the level of information of the students was moderate.

Conclusion: In addition, it was found that students' results on the basis of infection control are probably very good due to the rules and regulations set by the departments of the faculty of dentistry.

Keywords: Information, Infection Control, Dentists, Student.

Corresponding author:

Dr Baitullah,

Nishtar Institute of Dentistry, Multan

QR code



Please cite this article in press Baitullah et al, *Performance And Knowledge Of Dental Students With Respect To Control Of Infection Guidelines In Nishtar Institute Of Dentistry.*, Indo Am. J. P. Sci, 2020; 07(07).

INTRODUCTION:

If infection control rules are not applied correctly, healthcare is associated with the risk of infection. Dental services are a branch of health care. Various diseases, such as infectious diseases, threaten dentists, these diseases include neck pain, back pain and infectious diseases¹⁻². Dental services are an exception to this rule. Infectious diseases caused by bacteria, viruses or fungi pose a risk to the health of dentists and office staff and can cause transmitted infections through cross-contamination. Human immunodeficiency virus (HIV), which causes hepatitis B virus and acquired immunodeficiency syndrome (AIDS), is one of the most dangerous infectious agents³⁻⁴. According to statistics published in 2006, about 360 million and 12 million patients worldwide suffer from hepatitis B and syphilis. They serve as a source of infection and can transmit the disease to healthy people⁵⁻⁶. Now more attention can be paid to HIV infection that emerged in the 1980s. In 2006, there were 60 million HIV patients worldwide. These diseases are transmitted through blood, tissue residues, infected aerosols or sharp cutting tools. The risk of infection is high because dentists and dentists work with sharp cutting tools. Studies have shown that the risk of hepatitis B infection in dentists is 57 times higher than the risk of AIDS and three times the risk of general infection. Regardless of the importance of compliance with infection control rules by dentists and dentists, the quality of infection control has been reported as poor even in developed countries. Verogen *et al*. In their study in Italy, they assessed the knowledge and attitudes of dentists in infection control and concluded that the populations studied had a good knowledge of the risks associated with dentistry and infection control protocols⁷⁻⁸. Duffy *et al*. 89% of dentists in Romania believe gloves are effective in preventing infections; however, only 24% of them changed the gloves for each patient. Montagna and others said that dental staff did not follow infection control protocols, stating that the subjects did not take the risk of infection (especially inhalation) very seriously. McCarthy and others found that dentists working in metropolitan suburbs were not well prepared to treat patients at high risk of infection. Several studies were conducted between dentists, laboratory technicians and students in Canada, Jordan, India, China and Iran, all of which showed poor information from dentists on infection control rules. Haghanifar and Heidari assessed information on disinfection and sterilization rules in the Yellow District as part of the survey, noting that the average information obtained by male and female dentists was 8.11 and 3.12 out of 20. In addition, the average knowledge score of dentists with less than 5 years of professional experience was higher

than that of experienced dentists⁹⁻¹⁰. The incidence of infectious diseases can be reduced by strict adherence to infection control measures. Wearing gloves, masks and a white dress while working and removing them as they leave the processing room, using sterile syringes and disposable tools, and washing hands before and after changing gloves, these are just some of the basic rules for infection control that can help prevent cross-contamination in the dental environment. Given the importance of this issue and the superiority of control protection, which is a priority in the overall health care system policy, this study aims to provide information and results to dental students on the principles of infection control and planning targeted health strategies.

MATERIALS AND METHODS:

This practical, analytical and transverse study was conducted in 110 third, fourth, fifth year dental students at the Nishtar Institute of Dentistry, Multan for six months duration from September 2019 to February 2020. The maximum sample size was calculated as 87 using the Kerjesi and Morgan's tables to determine the sample size. Participants were randomly selected. A survey was used to evaluate the information and a checklist was used to evaluate students' performance in accordance with infection control guidelines. One of the authors filled out a checklist, observing without intervention. The surveys were conducted among dentistry students and collected shortly after students' responses were completed to avoid discussion with each other. The field project lasted 6 months. The checklist was filled in before the survey was implemented because the reverse order can lead to bias and lead patients to pay more attention to infection control measures. The study consists of two chapters: the demographic department sits on the sexual and academic income year of dentistry students, and the second chapter with 3 performance questions and 6 information questions. The study was designed by a scientist. Each question is assigned 1 point, and the wrong answer is assigned zero points. Therefore, the total score ranged from zero to 9. Students who correctly answered less than 50% of the questions were classified as underinformed, and those who correctly answered 50-75% of the questions were classified as Central, while those who correctly answered more than 75% were classified as having a good level of knowledge. Among the university's infection control instructors, an 11-question was conducted to assess the validity of the study (the validity of the content). They assessed the questions and informed that one of the questions was invalid and was therefore excluded. Finally, the validity of the survey with 9 questions has been verified. To assess credibility, the study was conducted between 10 dental students (equal to the

number of men and women not in our research population) and was asked to complete two sessions with an interval of two weeks, and the agreement between their responses was assessed in two sessions. The alpha Cronbach reliability factor was 83%. The checklist used in this study was also designed by the authors and included 16 infection control rules, including wearing a clean white dress, wearing sterile gloves, wearing protective goggles and clothes for each patient, changing clothes for each patient, collecting and eliminating waste, washing hands before and after work (for each patient), before and after injecting anesthetic to cover the needle change the thread tip for each patient and do not pull the mask under the chin. The collected data was analyzed using SPSS version 21. The correlation of the level of information using infection control patterns was assessed. The data was analyzed using identification statistics and calculated averages and SD values. The T test, the Chi square test, the

Kruskal-Wallis test and the Spearman correlation coefficient were also used to analyses the statistics. The severity level is set to P-0.05.

RESULTS:

This study was conducted in 87 student dentists. 57% of participants were women and 43% were men; 4 (4.6%) Dentistry students were foreign graduates participating in complementary dental courses, 7 (8%) sixth year, 19 (21.8%) 26 (29.9%) in the fourth year and 31 (35.6%) third year of dentistry. On average, 65% of women and 55% of men correctly answered information questions, while 67% of women and 66% of men answered the application questions correctly. Therefore, overall, women had an average information score higher than men (66 vs. 60%). In general, the third question (without limiting the rules for infection control in different patients) has the highest frequency (n-84), and the correct answers to the question have the lowest frequency (n-33).

Table 1. The mean scores of knowledge and performance questions acquired by male and female students (based on their academic year)

Academic entry year	Sex		Number	Mean	Standard deviation
Complementary dental education students	Female	Total	2	5.5000	.70711
		Performance		2.0000	.00000
		Knowledge		3.5000	.70711
	Male	Total	2	5.5000	.70711
		Performance		2.5000	.70711
		Knowledge		3.0000	.00000
2016	Female	Total	3	6.6667	1.15470
		Performance		3.3333	.57735
		Knowledge		3.3333	.57735
	Male	Total	4	5.7500	1.50000
		Performance		3.0000	.81650
		Knowledge		2.7500	.95743
2017	Female	Total	11	5.6364	1.12006
		Performance		2.7273	.90453
		Knowledge		2.9091	.70065
	Male	Total	8	5.0000	.92582
		Performance		2.1250	.83452
		Knowledge		2.8750	.64087
2018	Female	Total	15	6.4667	1.50555
		Performance		3.0000	.92582
		Knowledge		3.4667	.91548
	Male	Total	11	5.8182	1.53741
		Performance		3.4545	.82020
		Knowledge		2.3636	.92442
2019	Female	Total	19	5.6316	1.46099
		Performance		2.3684	.83070
		Knowledge		3.2632	1.04574
	Male	Total	12	5.0833	1.44338
		Performance		2.1667	.71774
		Knowledge		2.9167	1.31137

Table 1 shows the average assessment of the average knowledge and performance questions obtained by male and female students (depending on academic years). In terms of information level, topics were divided into three groups: weak (less than 50% correct responses), moderate (50-75 correct answers) and good (more than 75% correct responses). Overall, 18% (7 women and 10 men) had poor knowledge, 74% (38 women and 25 men) had good knowledge of infection control inside and 8% (5 women and 2 men). In our study, 100% of patients wore sterile gloves, changed gloves for each patient, collected and disposed of waste after patient treatment or dental examination, covered the needle before and after the injection of anesthesia, and changed the tooth extraction tip for each patient. All, 94% wore a protective mask and changed for each patient; 31% did not pull out the mask under the chin; 89% wore clean white capes. Since 10 dental students wore a protective dress in the journalism department, none of them wore dresses; 19 dentists were in the oral and maxillofacial surgery ward and wore a dress and reported that it had changed for each patient. A total of 74% wear safety glasses; 10% (8 students in the 2011 class and an additional student) washed their hands before starting treatment, and 90% washed their hands after treatment; 93% use sterile tools for each patient. Results showed that dentistry students (from different classes) had the same level of knowledge about infection control rules; His practice in this regard was the same. Overall, the use of students in dentistry was superior to the knowledge and poor correlation found in the poor correlation between knowledge and the use of student's dentistry; Several other factors seem to influence the use of dentistry students.

DISCUSSION:

In general, the average knowledge score of women was equal male. Students of dentistry 1, 5 and 7. these questions are asked about the use of alcohol as a disinfectant, wearing gloves and washing hands. This result may depend on students' poor learning about these problems. Students of dentistry answered questions 6, 8 and 9 in an acceptable way and correctly answered questions 2, 3 and 4. The results of the current study showed an acceptable obligation to comply with infection control rules, which may be subject to strict rules and regulations laid down by university departments¹¹. Only 31% of students did so when they talked to their colleagues, nurses or instructors and then did not change them; This was contrary to the rules of infection control. A significant percentage of dentistry students wore clean white robes in clinics; However, the white robes of dental students working in radiology and endodontic departments were not clean, which was somehow justified because they worked with solutions for film processing. Infection control guidelines were strictly followed in the oral and maxillofacial surgery department. In this section, all students of dentistry wore a bathrobe. In the journalism department, none of the students in dentistry wore dresses, because this department did not give students a dress¹². The majority of dentistry students (93%) are sterile tools used for each patient. Only 10% washed their hands before work. Given the low frequency of this habit, some rules and regulations should be introduced in university faculties. A high percentage of dentistry students washed their hands after treatment, only a few did so before starting treatment. This is probably because dentistry students are very aware of the risk of transmission of the disease from patient to dentist (as well as highlighted during infection control). Therefore, they made sure to pay more attention to hand washing compared to patients

before treatment¹³⁻¹⁴. A similar study at the Mashhad School of Dentistry reported that dentistry students are generally little aware of infection control and that students set out to improve the quality and quantity of an infection control course to improve their knowledge of the subject. Qualifications for a moderate level of knowledge of dentists practicing infection control in Isfahan. Montagna and others, in their research in Italy, reported that 95.5% of dentists wore gloves, wore 90.1% masks and 91.2% wore different glasses from our findings. This divergence in results may be due to educational systems and differences in the curriculum and cultural differences in both societies. Al-Omari and Al-Dwairrin assessed their commitment to infection control rules in Jordan in 2004 and reported that 100% of Jordanian dentists changed the tooth tip for each patient. In Canada, Jordan, India, China and Iran, dentists, laboratory technicians and dental students conducted various studies showing their poor knowledge of infection control rules¹⁵. Barleanu et al. emphasized the need for dentistry students to increase their knowledge of infection control by teaching strong clinical behavior skills and the ideal use of infection control protocols. Haghanifar and Heidari used a survey to assess dentists' knowledge of disinfection and sterilization, and reported that the average score achieved by male and female dentists was 11.8 and 12.3 out of 20. In addition, dentists with professional experience of less than 5 years had an average knowledge score higher than experienced dentists.

CONCLUSION:

This study showed that dentistry students have moderate knowledge of infection control. Students of dentistry fared very well in terms of infection control rules, which probably resulted from mandatory infection control rules and regulations

established by university faculties. However, performance was not good compared to products that could not be highlighted by university faculties (such as hand washing before treatment of patients). Dental students should provide a brochure on infection control rules in each section before starting rotation. In addition, infection control instructions can be listed on the poster as a reminder to improve student information and improve their use.

REFERENCES:

- Ebrahimpour, Alireza, Amir Hossein Pakravan, Maedeh Yousef Nezhad, Nadia Alipour, Mohammad Ebrahimi Saravi, Fatemeh Rahbar, and Zahra Sanie Khatam. "Knowledge and performance of dental students with regard to infection control guidelines in Dental School of Mazandaran University of Medical Sciences in 2015." *International Journal of Medical Research & Health Sciences* 5, no. 8 (2016): 298-304.
- Majidipour, Parastoo, Amir Aryan, Maryam Janatolmakan, and Alireza Khatony. "Knowledge and performance of nursing students of Kermanshah-Iran regarding the standards of nosocomial infections control: a cross-sectional study." *BMC research notes* 12, no. 1 (2019): 1-5.
- Bukhari, Omair, Ayman Ahmed, and Ibtesam Afifi. "Adherence of Umm Al-Qura University Dental Students to Infection Control Guidelines: A Four Year–Auditing Report." *Open Access Macedonian Journal of Medical Sciences* 8, no. E (2020): 19-26.
- Ghimire, Barsha, and Suresh Chandra. "Awareness of Infection Control among Dental Students and Interns." *Journal of the Nepal Medical Association* 56, no. 210 (2018).
- Ebrahimi Saravi, Mohammad, Alireza Khalilian, and Hedyeh Ronaghi. "Prevalence of Temporomandibular Disorders (TMD) and its Signs and Symptoms in Sari Dental School Clinic." *Journal of Mazandaran University of Medical Sciences* 26, no. 143 (2016): 120-128.
- Naseri-Salahshour, Vahid, Hamid Abredari, Mahbobeh Sajadi, Masoumeh Sabzaligol, and Mahmood Karimy. "The effect of oral health promotion program on early dental decay in students: A cluster randomized controlled trial." *Journal of caring sciences* 8, no. 2 (2019): 105.
- Samad, Rasmidar, Ummul Rawiyah, and Cisilia Septiany. "The frequency of wearing protective eyewear and face shield at educational hospital and public service Hospital in Makassar." *J Dentomaxillofac Sci* 2 (2017): 124.
- Amiri, Mohammad, Ahmad Khosravi, Saghar Sakhaee, and Mehdi Raei. "Knowledge, Attitude and Practice of Nursing and Medical Students about HIV/AIDS and Hepatitis." *The Open Public Health Journal* 13, no. 1 (2020).
- Ghojzadeh, Morteza, Saber Azami-Aghdash, Fatemeh Pournaghi Azar, Mozghan Fardid, Mohammad Mohseni, and Taraneh Tahamtani. "A systematic review on barriers, facilities, knowledge and attitude toward evidence-based medicine in Iran." *Journal of Research in Clinical Medicine* 3, no. 1 (2014): 1-11.
- Orabi, Eman. "STANDARD ISOLATION PRECAUTIONS EDUCATIONAL INTERVENTION ON UNDER GRADUATE MEDICAL STUDENTS OF ZAGAZIG UNIVERSITY." *Zagazig University Medical Journal* 23, no. 4 (2017): 1-14.
- Kumar, KV Vijay, and V. Suresan. "Knowledge, attitude and screening practices of general dentists concerning oral cancer in Bangalore city." *Indian journal of cancer* 49, no. 1 (2012): 33.
- Sherah, Ameen Saleh. "ASSESSMENT OF INFECTION CONTROL AMONG HEALTHCARE WORKERS IN HEALTHCARE CENTERS SANA'A, YEMEN." *International journal of public health research* 5, no. 2 (2015): 597-605.
- Banaei, Mojdeh, Asiyeh Pormehr-Yabandeh, and Nasibeh Roozbeh. "Evaluation of the cesarean section rate and its reasons in Shariati Hospital of Bandar Abbas in 2015." *Annals of Tropical Medicine & Public Health-Special Apr 2018 Vol 12 2* (2018).
- Neghab, Parisa, Mryam Bakhtiar, and Ali Golkari. "The relationship between parental socioeconomic status and knowledge, attitudes and tendency toward fluoride therapy for their 7-9 year old school children." *Journal of Health Sciences & Surveillance System* 5, no. 2 (2017): 51-58.
- Khani Jeihooni, Ali, Shideh Arameshfard, Mahmood Hatami, Morteza Mansourian, Seyyed Hannan Kashfi, Babak Rastegarimehr, Omid Safari, and Mehdi Amirkhani. "The effect of educational program based on health belief model about HIV/AIDS among high school students." *International Journal of Pediatrics* 6, no. 3 (2018): 7285-7296.