International Journal of General Medicine
and Pharmacy (IJGMP)
ISSN(P): 2319-3999; ISSN(E): 2319-4006
Vol. 5, Issue 6, Oct - Nov 2016; 35-46

International Academy of Science,
Engineering and Technology
Connecting Researchers; Nurturing Innovations

KNOWLEDGE AND PRACTICE REGARDING INFECTION CONTROL AMONG DENTAL STUDENTS AT BASRA UNIVERSITY COLLEGE OF DENTISTRY, IRAQ

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ABSTRACT

Background: Infection control guideline in dental practice must be followed and practiced all time by dental students during daily practices, so they can reduce the risk of transmittance of a many of dangerous infectious diseases to them and to their patients and other health care personnel**.** As the dental students consider high risk groups because they exposed continuously to microorganism present in saliva and blood during treatment.

Objectives: To assess and evaluate the knowledge and practices regarding infection control of dental students in the college of Dentistry in Basra, Iraq.

Materials and Methods: A cross sectional study was carried out during the academic year 2014-2015. The questionnaire form consists of 25 questions; 15 of them related to knowledge of student and 10 questions related to practices of infection control guideline. 94 dental students from 3rd, 4th and 5th class participated in this survey. Data were collected and analyzed.

The Results: The response rate was 92.1%; there were no significance differences between male and female. In general, a low percent (62%) of students possessed a high level of knowledge related to infection control, all students always wearing gloves and face mask, while wearing gowns and eyewear protection in a very low percent. Washing hands before and after treatment was practiced relatively in low percent 74.5, half of the students practiced pending of needles and discard properly after uses. Among all students under study, 37.2% were vaccinated against hepatitis B virus, but it was statistically not significant with respect to years of study.

Conclusions: In general, dental student had a low level of knowledge related to infection control and they practiced some guideline in a very low percent; especially washing hands between patients and bending of needles after uses, a small percent of dental students were vaccinated against HBV

KEYWORDS: Infection Control, Knowledge, Practice, Dental Students

INTRODUCTION

In dental practices, infectious agents can be transmitted between patients, dental staff, and the environment. As many other occupations, the dental health care providers are at high risk of exposure to many pathogens, especially blood-borne pathogens such as hepatitis B virus (HBV), hepatitis C virus, and human immunodeficiency virus (HIV), and also may have at a high risk of exposure via respiratory tract such as Mycobacterium tuberculosis, streptococci, and other bacteria and viruses that colonize the oral cavity [1, 2]. The risk of exposure can be enhanced or augmented by using unsafe practice regarding infection control measures by dental health care providers or by dental students during their work in a

dental clinic. The health care provider in general exposed to infectious diseases and this is considered as a major health problem in many countries, especially developing one [3], and among those, dentists and dental students have a higher risk to get infectious diseases because of direct contact with blood and saliva during daily work [4].

Dental patients may appear apparently healthy, but on the other hand may harbor many pathogens which can be transmitted to other patients or to dental staff which may lead to serious infectious diseases So one of the important measures of infection control is regarding all patients attending to the dental practice as infectious and you treat as such and take all other procedures subsequently. Therefore, infection control procedures should be followed vigorously, by all dental health care providers as well as dental students. The infection control guidelines include standard and special precautions to be followed to ensure a safe working environment and prevent transmission of possible pathogens among dental health personnel and their patients. Awareness and adherence to these guidelines are important roles in preventing nosocomial and occupational infectious diseases, and despite the considerable emphasis placed on standardized infection control procedures, it appears that only a few dentists adhere to these protocols in their dental practice [7], also many other studies showed that dental students may not follow these recommendations or protocols properly [4]. Therefore the important ways to improve compliance of dental health providers and dental students towards infection control program adherence is continuing dental education which plays a significant role in training them to adopt adequate knowledge and practices related to infection control procedure.

Hepatitis B is caused by the (HBV). The viral particles may remain infectious for a week in dried blood at room temperature. HB is the most infectious blood-borne pathogen likely to be encountered in the dental practice, so if the all infection control procedures are effective in preventing the transmission of HB, they will properly be effective in preventing the transmission of other diseases, so in this study questioner, we concentrate on HBV. HBV remains a major health problem [8]. More than two billion infected people worldwide. The incidence of HBV infection is approximately one million per year across Europe and 200,000 to 300,000 in the United States [9].

The goal of infection control is aiming to disturb the chain of infection, there are a lot of strategies for doing this; One of the most important strategies is to kill the microorganisms so they become harmless, wearing protective barriers, hand hygiene, and immunization of all health care providers are other strategies and consider important guidelines for infection control. Dental college is responsible for providing appropriate infection control measures for their students, a good knowledge, positive attitudes, and appropriate practices by proper training of dental students to protect patients and the establishment of safer working conditions [5]. Many studies worldwide showed that inappropriate knowledge, attitudes, and practice regarding infection control procedures to be followed by dentists during daily practice [6]. There are a few data in our country regarding infection control program in dental practice, so the purpose of this study was to evaluate the knowledge and practice regarding infection control among dental students in Basra College of Dentistry as the first part to be followed by applying this study to the dentists working in primary health centers in Basra.

MATERIALS AND METHODS

This cross-sectional study was done at the College of Dentistry, University of Basra, Iraq during the academic year 2014-2015, the study sample consist of 102 dental students who accept to participate in this study from 3rd, 4th, and 5th year. The first and second years were excluded because they are not engaging in treating the patients yet. The questionnaire form was taken from other relevant studies, like study conducting at the Ankara University, Turkey [22], Iranian study [10], study conducting in Yemen [15], and study in India [11], with some modification according to the situations in our country.

The questionnaire consists of 25 closed questions regarding infection control, 15 questions related to the knowledge of the students regarding infection control, 10 questions related to their practice. First group questions concentrate on knowledge about modes of transmission of infectious diseases, vaccination program, general information about main viruses like HBV and HIV, and means of sterilization of instruments. These questions are closed and the answers either with yes, no, or I don't know. The second group of questions includes wearing of protective barriers, hand washing before and after treatment, dealing with sharp materials, and status of immunization against HBV. These questions are answered either always, mostly, sometimes, rarely, and never. The questionnaire forms were given to dental students in the 3rd , 4th, and 5th year, then the students were asked to fill out at the hall lecture without discussion, this done separately for each class. At the beginning, the informed consent was taken from the students who agreed to participate in the study prior to answering the questions.

The data collected and statistical analysis conducted using frequency, chi-square, and fisher exact test, with a 5 % level of significance. Data analysis was performed using SPSS version 20. The P value of <0.05 considers statistically significant.

RESULTS

Demography

As shown in the table (1). Out of 102 questionnaire forms, only 94 forms retained, the responding rate was (92.1%). Out of 94 students participate in this study, nearly equal number of both male and female, (46 48.9%) and 48 (51.1%) respectively, with no statistically significant differences between them, p-value <0.0.421. Regarding the year of study, 30 (31.9%) students from the third class, 39 (41.5%) students from the fourth class, and 25 (26.6%) students from the fifth class participated in this study. Most of the participants were from 4th class and the lowest from the 5th one.

Knowledge

As shown in table 2, regarding question-related to knowledge of student about infection control in their daily practice, most of the students answer correctly about the causative factor of AIDS, 83 (88.3%), but with no statistical significance differences among year of study. About 82 students (87.2%) knew that the blood, non-protective sexual contact, body fluids and secretions have an important role of transmission of hepatitis B and AIDS in dental practice with no statistical significance differences according to academic year. Regarding the incubation period of hepatitis B virus, about 27 (28.7%) student answer correctly, and according to years of study 3rd , 4th, and 5th the percent of correct answer were (10%, 43.6% for 3rd year, 4th respectively, and surprisingly very low percent in 5th year (28.7%), with high statistical significance, p-value = 0.007.

Other questions in this study about the nature of hepatitis B virus, hepatitis B vaccination program, the laboratory indicators that refer to the immunity status of the patients, Transmission of HBV via saliva, and whether the dentists have a higher risk of getting infection other than the general population. The knowledge of the students of these questions varies as shown in table 2 and all with no statistically significant differences. There is a high statistical significance difference in answering the question about the proportion of dentists and dental students who were exposed frequently to needle stick injury, 69 (73.4%) said yes and from those 19 (63.3%) of the third year, 26 (66.7%) of the fourth year, and 24 (96%) of the fifth year said yes, p-value = 0.002. Just more than half of students 50 (53.2%) answered correctly about the minimum time required for sterilization of instruments in an autoclave, which is 15 minutes, (50 %, 41%, and 76%) of third, fourth and

fifth year respectively, with high statistical significance according to academic year, p-value = 0.002. There is no statistical significance differences among years of study regarding the question related to the temperature needed for sterilization in an autoclave, about 73.4 % of all student answer correctly. Only 33 (35.1%) of all students said that tuberculosis have a high transmission rate via saliva than other diseases with no statistical significance according to academic year.

From these findings, the general knowledge of all 94 students was low, about 62% of them answered correctly of all 15 questions related to infection control knowledge. The highest knowledge was in 5th class, 71.5% of them answered questions correctly. There was no much difference between the third and the fourth class, although the knowledge of the third class was slightly more than the fourth class, (61.5%, 59.82%) respectively.

Practice

The practice of dental students to word infection control procedures was evaluated in this study by 14 questions. The practice of wearing protective barriers was shown in table 3, all students (94) were wearing gloves either for all time they work or most of the time, 80 (85.1%) students were always worn gloves and no student never or rarely used gloves. When we compare these findings according to years of study, we found that 72(73.3%), and 33 (84.4%) students from third and fourth class, and almost all fifth class 25 (100%) were wear gloves always with statistically significant. These findings also applicable for wearing face mask practice, most of the dental students 86 (91.5%) were always wear face mask, this is practicing always by all students in the fifth class, while 32 (76.6%) of third class and 37 (94.4%) of the fourth class , also these changes were statistically significant with respect to the years of study, p-value = 0.016. Wearing gown during works shows some different practice among students in this study, only 3 students (3.2%) were always wearing gowns, most of the students they never use gown during work 53 (56.4%), with no statistical significance according to academic year. Wearing eyewear protection does not practice in all time by all students under study. Nearly half of students 48 (51.1%) were never worn eye protection during their work, 18 students (19.1%) and 28 (29.8%) they wear eye protection some time or rarely respectively, with statistically significant differences among years of study, p-value = 0.019.

As shown in table 4, about 74.5 percent of all students they are practicing washing hands always before and after treatment procedures, none of them, they never wash their hands, these changes were statistically significant with respect to a year of study, p-value = 0.044. The practicing of washing hands after an accidental contact with the patient' s body fluids, about 63 (67%) of the students they wash their hands always, only 2 students they never wash their hands but with no statistical significance differences among years of study. Bending needles after using is very important practice to prevent needle stick injuries among health care personnel and among patient and even people outside the health system, this positive behavior were always practiced by 51 (53.1%) of all students and they are never practiced by only 5 (5.3%) students with no statistical significance differences according to academic year. Checking the indicators of sterilization of instruments by dental students, inform their patients about hepatitis B disease and offer them to be vaccinated, were found not statistically significant differences according to academic year, and they have always practiced, by low numbers of students 35 (37.2%), and 21 (22.3%) respectively. Students were asked if they wear gowns during dental procedures which can lead to the generation of splashes or sprays of blood and body fluids during work, only 37 (39.7%) students they always wear a gown during these procedures, and 16 (17%) they never wear. These changes were statistically significant according to academic year. Changing gloves between patients are a very important behavior to prevent transmission of infectious agents in dental practice, about 77 (77.7%) of all students they practiced this behavior always during their work while only 1 student (from third class) they never change gloves between patients with no statistically significant

differences.

The students under study were asked with what do you wash your hands, nearly half of students 55 (58.5%) were washing their hands always with antiseptic solutions, while 29 (30.9%) students wash their hands with plain soap only, 6 students (6.4%) wash their hands with detergents and 4 (4.3%) with both soap and antiseptic solutions. These differences were found to be highly significant among students in the different years of study, as shown in figure 1. Regarding the status of immunization against HBV of all the students under study, we found that, only 35 (37.2%) from all 94 students were vaccinated. The majority of students (59 (62.8%) were non-vaccinated. The highest vaccinated students were from 5th class while the lowest from the 3rd one (48%, 30%, respectively), but with no statistical significance differences according to academic year.

DISCUSSIONS

Dental students were exposed to many infectious diseases during their practice through the years of graduation, infection control program and its guidelines are taught and practiced during these years. So our study is to evaluate the student' s knowledge, practicing, and adherence to these guidelines. There was no statistical significance difference in gender among years of study, (48.8%, and 51.1%) for both male and female respectively. With respect to years of study (31.9%, 41.5%, and 26.6%) for 3rd, 4th, and 5th year respectively Because of none significance differences regarding the gender of students, and there is no much difference in the age of them, so our analysis in this study was concentrated on the years of study. These findings were in agreement with other studies [10, 11].

Knowledge

Overall knowledge of the students regarding infection control, were lower than expected, about 62% of all students answered all questions correctly , and these finding in agreement with study in central India in which there was a poor knowledge[11], and lower than found in other study in India[23]. Only 5 from 13 questions were answered correctly by more than 80 percent of students, this indicate that our student has a relatively low level of knowledge regarding infection control, which may attribute to that the information relating to the infection control acquired by students during their academic study were not studied in one item related to this subject, but it is a compilation of several subjects taught during the five years of the study. These findings were in agreement with a study conducted in Uganda [12], and disagreement with an Iranian study, which showed that there are acceptable levels of knowledge among their students [10]. About 70 percent of all students they did not answer correctly about the incubation period of HBV, surprisingly only 28.7 percent of the 5th year students have correctly answered this question; this may refer to the shortage in knowledge related to this topic.

Half of the students in this study (52, 53.3%) were answered correctly regarding the minimum time required for sterilization of instruments in an autoclave. These findings were higher than that found in the Brazilian study in which there were no students describe the correct pressure, temperature, and sterilization time needed, with statistical significance among year of study[13], and it is much lower than that carried out in Pakistan and India in which there were (80% and 87% respectively) from students correctly answered this question[5,2]. The percent increase when you asked about the temperature needed for sterilization, 71 (75.5%) of all students respond correctly with no statistical significance among years of study, although the percent is high, it is still lower than that achieved in Pakistan in which 87.5% of students were correctly answered this question[14]. About 40.4 % of all students correctly answered that TB has a higher rate of transmission via saliva than other diseases, the students in 5th class answered correctly in a percent of 60, with no statistical

significance differences among year of study. These findings were lower than that of the study carried out in central India in which about 50% of students were answering this question correctly [11].

Practice

Wearing gloves and face masks were practiced by all students either in all time or most of the time during their practice as shown in table 3. 85.1% always wearing gloves and 14.9% wearing it most of the time, regarding face masks 91.5 % of students always wear it while 8.5% wear it in most of the time, both with statistically significant differences when comparing according to years of study. These determinations can be ascribed to the availability and easy uses of these equipments and to awareness of dental students about the importance of these protective barriers in preventing transmission of an infectious agent in dental practice, these findings were in agreement with other studies [10, 12, 15, 16, 17, 21]. On the other hand the use of eyewear protection and gowns by dental students practiced by a very low percent, 3 (3.2%) of all students always wore protective gowns and no student were always wearing eyewear, with statistical significance differences regarding eyewear and non-significance with respect to wearing gowns among years of study, these finding in agreement with study in Yemen [15], and much lower than that conducted in Saudi Arabia, were 91.6% of students wearing gowns and 30% wearing eyewear protection [16], and it is lower than that studied in [13,17].

Washing hands and proper hygiene reduced the number of infectious pathogens on the hands, according to infection control guidelines; hand hygiene considers the most important practice to reduce transmission of infectious agents in the dental clinic [18]. In our study, 74.4% of all students they always practiced washing their hands, this percent was lower than we expected, and there was a highly statistically significant among years of study, p-value 0.004. These results were found to be in agreement with study conducting in Saudi Arabia in which 73% of student they always washing their hands [16]. These findings refer to low awareness of students toward the importance of hand washing in the infection control program, so must be encouraged and evaluated to be better in the future. This also applies in practicing washing hands by the students after accidental contact with the patient' s body fluids or blood, we found that it is practiced in all in a percent of 67 of all students but with no statistically significant differences among years of study.

To avoid needlestick injuries by dental health care personnel l(HCP), they must practice pending of needles after using and discard them in a special container. In our study, we found that about half of students, 53.1% they always bend needles and discard them properly during daily practice, only 5 students they never do so, with no statistically significant differences among years of study. This percent was very low and made the students in our college more vulnerable to infectious diseases through needle stick injuries. These findings also can be attributed to low awareness of our students of this practice in preventing infectious diseases among HCP, and when you compare these results with other studies, we found that our finding is much lower than that conducting in Brazil in which nearly all students discarded needles and cutting material properly [13]. In our study, dental students practiced checking of the sterilization indicators for instruments in an autoclave in a low percent, 37.2% of all students with no statistical significant differences among years of study. This may be attributed to either non availability of these indicators or low awareness of dental students. About quarter, 22.3% of all students are willing to inform their patients about HBV infections and its sequel, and offer them to be vaccinated, and thus need to be encouraged in order to maintain good numbers of vaccinated people. Using protective gowns were low in general by students in our study, but when the dental procedures was well known to generate splashes or spray of blood and body fluids, we found that the number of students wearing gowns increased when work in such procedures to reach 37.9 % of all students, although it is still low but indicated that the students were aware of wearing gowns in such

procedures to protect themselves and others. These finding found to be lower than that of a study conducting in India [17].

Changing gloves between patient were practiced in all time during daily work in a percent 77.7 of all students, but it is not significant when to compare with years of study, other students practiced it either most of the time or sometimes, and there was only one student was never doing it. Although it is relatively acceptable percent, it is still lower than what we found in other studies such as a study carried out in Kuwait in which 95% of student do it always[19], in Yemen reported that 96.5% of students changing their gloves between patients[15], in Saudi Arabia in a percent of 99.6[16], this finding in our study in agreement with the study in Sharjah in which the percent was 75 of 4th class and 63.5 of 5th class with significant differences between them [21]. More than half of our students (58.5%) were washing their hands with the antiseptic solution in all of the time. While 30.9% washing with plain soap, 6.4% with chemical detergent, with high statistical significance differences among years of study This low percent of using antiseptic solutions may be explained by non-awareness or these solutions either unavailable or not nearby students, this finding was higher than what we found in studies, conducting in central India and in Pakistan, in them, (39.2%, 43.8%) students respectively, were used antiseptic solutions in washing their hands [11, 16], using plain soap was low when compared with study in Pakistan [16]. It is higher than the study conducting in Brazil, in which they found that only 22.2% of the students using plain soap in washing their hands [20]. Immunization of HCP play a major role in maintaining good infection control in dental practice, as it is reduced both the susceptible individuals and diseases transmission to others [12]; therefore we evaluate the immunization status of all students under study. We found that 35 (37.2%) of all students were vaccinated against HBV, that means many students are susceptible to this dangerous infection, it also means that there were no strict procedures to obligate students to vaccination. These findings were much lower than that found in other studies, in Iran found that 80% of student were vaccinated against HBV [10], study in Yemen found 71.7% vaccinated students [6], 90% vaccinated students in Saudi Arabia [16]. 86.7% in India [17], while in Pakistan 70% students were vaccinated [5], (94.6%, 96.8%) students were found to be vaccinated in a study in Sharjah of both 4th and 5th years respectively. In our study, we did not ask about the vaccination against other diseases like TB and tetanus, because of, in our country, there was no program of vaccination against these diseases in adult, just the immunization program during childhood. This study mainly depend on what answers the students, not on what has been seen, especially the practical side, so it may be considered not very accurate in this respect.

CONCLUSIONS

From our study, we conclude that the average infection control knowledge of dental students was not adequate to maintain good infection control measures in the dental clinic. Dental students followed most of the guidelines, but in acceptable percent, the status of vaccination against hepatitis B virus was low, and need to be followed up and vaccinate all students in the future.

Appendix

Table 1: Distribution of Dental Students According to Gender and Years of Study

Gender	Year of Study			Total
	Third Year	Fourth Year	Fifth Year	
Male	14 (46.7%)	17 (43.6%)	15 (60%)	46 (48.9%)
Female	16 (53.3%)	22 (56.4%)	10 (40%)	48 (51.1%)
Total	**30 (31.9%)**	**37 (41.5%)**	**25 26.6%)**	**94 (100%)**

P value = 0.421

Table 2: Knowledge of Dental Students about Infection Control

Statement	Answers	3rd Year N (%)	4th Year N (%)	5th Year N (%)	Total N (%)	P-Value
HBV is observed frequently in our country	Yes	18 (60%)	21 (53.8%)	13 (52%)	52 (55.3%)	0.953
The causative factor of AIDS is HIV	Yes	24 (80.0%)	34 (87.2%)	25 (100.0%)	83 (88.3%)	0.163
Blood, sexual contact ,body fluids are means of transmission of HBV and AIDS	Yes	25 (83.3%)	33 (84.6%)	24 (96.0%)	82 (87.2%)	0.412
Incubation period of HBV is about 50- 80 days	Yes	13 (10.0%)	17 (43.6%)	7 (28.0%)	27 (28.7%)	0.007
HBV is a DNA virus	Yes	16 (53.3%)	19 (48.7%)	10 (40.0%)	45 (47.9%)	0208
Dentist have a role in transmission of HBV	Yes	32 (73.3%)	35 (89.7%)	24 (96.0%)	81 (86.2%)	0.084
Do you know HB vaccination program	Yes	14 (46.7%)	18 (46.2%)	18 (72.0%)	50 (53.2%)	0.187
Positive anti HBs Ag and negative HBs Ag indicated that the person is immune	Yes	8 (26.7%)	12 (30.8%)	10 (40.0%)	30 (31.9%)	0.832
HBV can be transmitted through saliva.	Yes	13 (43.3%)	18 (46.2%)	15 (60.0%)	46 (48.9%)	0.155
Dentists are at higher risk of HBV infection than the general population.	Yes	25 (83.3%)	32 (82.1%)	25 (100.0%)	82 (87.2%)	0.130
A considerable proportion of dentists experience needle stick injuries frequently.	Yes	19 (63.3%)	26 (66.7%)	24 (96.0%)	69 (73.4%)	0.002
There is a higher risk of HBV than HIV transmission through needle stick injury.	Yes	20 (66.7%)	27 (69.2%)	20 (80.0%)	67(71.3%)	0.690
The Minimum time required for sterilization in an autoclave	5 minutes	0 (0.0%)	5 (12.8%)	1 (4.0%)	6 (6.4%)	0.002
	10 minutes	15 (50.0%)	18 (46.2%	3 (12.0%)	36 (38.3%	
	15 minutes	15 (50.0%)	16 (41.0%)	21 (84.0%)	52 (55.3%)	
The temperature needed for sterilization in an autoclave	100 C0	3 (10.0%)	3 (7.7%)	3 (12.0%)	9 (9.6%)	0.546
	120 C0	25 (83.3%)	29 (74.4%)	17 (68.0%)	71 (75.5%)	
	150 C0	2 (6.7%)	7 (17.9%)	5 (20.0%)	14 (14.9%)	
Which of the following has a high rate of transmission via saliva	HBV	11 (36.7%)	16 (41.0%)	8 (32.0%)	35 (37.2%)	0.144
	AIDS	9 (30.0%)	10 (25.6%)	2 (8.0%)	21 (22.3%)	
	TB	10 (33.3%)	13 (33.3%)	15 (60.0%)	38 (40.4%)	

Table 3: Wearing Protective Barrier by Dental Students

Gloves	Always	Mostly	Sometimes	Rarely	Never	P-Value
3rd year	22 (73.3%)	8 (26.7%)	0	0	0	0.013
4th year	33 (84.6%)	6 (15.4%)	0	0	0	
5th year	25 (100%)	0	0	0	0	
Total	80 (85.1%)	14 (14.9%)	0	0	0	
Face Masks	**Always**	**Mostly**	**Sometimes**	**Rarely**	**Never**	**P-value**
3rd year	23 (76.6%)	6 (20.0%)	1 (3.3%	0	0	0.016
4th year	37 (94.9%)	2 (5.1%)	0	0	0	
5th year	25 (100%)	0	0	0	0	
Total	86 (91.5%)	8 (8.5	0	0	0	
Protective Gowns	**Always**	**Mostly**	**Sometimes**	**Rarely**	**Never**	**P-value**
3rd year	0	2 (6.7%)	6 (20%)	6 (20%)	16 (53.3%)	0.934
4th year	2 (5.1%)	3 (7.7%)	4 (10%)	6 (15.4%)	24 (61.5%)	
5th year	1 (4%)	2(8%)	4 (16%)	5 (20%)	13 (56.4%)	

Total	3(3.2%)	7(7.4%)	14(14.9%)	17(18.1%)	53(56.4%)	
Eyewear	**Always**	**Mostly**	**Sometimes**	**Rarely**	**Never**	**P-value**
3rd year	0	0	7 (23.3%)	15 (50%)	8 (26.7%)	0.019
4th year	0	0	6 (15.4%)	8 (20.5%)	25 (64.1%)	
5th year	0	0	5 (20.0%)	5 (20%)	15 (60%)	
Total	**0**	**0**	**18(19.1%)**	**28(29.8%)**	**48(51.1%)**	

Table 4: Practicing Infection Control Procedures by Dental Students

Practices	Third Year	Fourth Year	Fifth Year	Total	P Value
Washing hands after each treatment	17 (56.7%)	30 (76.9%)	23 (92%)	70 (74.4%)	0.004
Washing hands after contact with patient' s body fluids	15 (50%)	28 (71.8%)	20 (80%)	63 (67%)	0.257
Bending needles after use and discard it into an especial container	19 (63.3%)	16 (41%)	16 (64%)	51 (54.3%)	0.358
Check the indicator of sterilization	14 (46.7%)	14(35.9%)	7 (28%)	35 (37.2%)	0.214
Inform patients about hepatitis and offer them to be vaccinated	10 (33.3%)	7 (17.9%)	4 (16%)	21 (22.3%)	0.293
Wearing gown during procedures that generate splashes or sprays	16 (53.3%)	11 (28.2%)	10 (40%)	37 (39.4%)	0.023
Changing gloves between patients	21 (70%)	30 (76.9%)	22 (88%)	78 (77.7%)	0.861

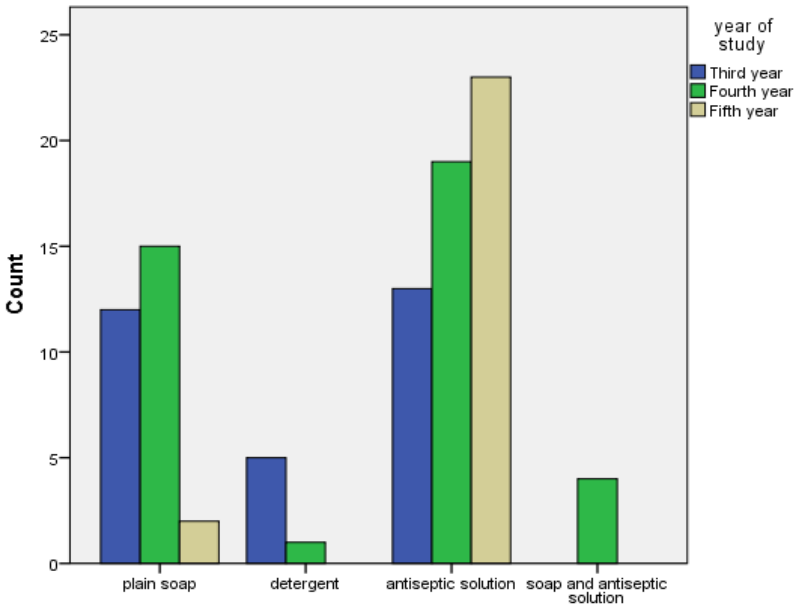

Figure 1: Materials Used In Washing Hand According to Years of Study

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