Accepted manuscripts are the articles in press that have been peer reviewed and accepted for publication by the Editorial Board of the Vojnosanitetski Pregled. They have not yet been copy edited and/or formatted in the publication house style, and the text could still be changed before final publication.

Although accepted manuscripts do not yet have all bibliographic details available, they can already be cited using the year of online publication and the DOI, as follows: article title, the author(s), publication (year), the DOI.

Please cite this article ISOLATION WITH RUBBER DAM: KNOWLEDGE, TRAINING AND ATTITUDES OF FINAL YEAR DENTAL STUDENTS

IZOLACIJA RADNOG POLJA UPOTREBOM KOFERDAMA: ZNANJA, VEŠTINE I STAVOVI STUDENATA STOMATOLOGIJE ZAVRŠNE GODINE

Authors Milena Milanovic*, Maja Dimitrijevic*, Jelena Juloski*, Jovana Juloski †, Vojnosanitetski pregled (2021): Online First September, 2021.

UDC:

DOI: https://doi.org/10.2298/VSP210325084M

When the final article is assigned to volumes/issues of the Journal, the Article in Press version will be removed and the final version appear in the associated published volumes/issues of the Journal. The date the article was made available online first will be carried over.
ISOLATION WITH RUBBER DAM: KNOWLEDGE, TRAINING AND ATTITUDES OF FINAL YEAR DENTAL STUDENTS
IZOLACIJA RADNOG POLJA UPOTREBOM KOFERDAMA: ZNANJA, VEŠTINE I STAVOVI STUDENATA STOMATOLOGIJE ZAVRŠNE GODINE

Milena Milanovic*, Maja Dimitrijevic*, Jelena Juloski*, Jovana Juloski†

*Clinic for Pediatric and Preventive Dentistry, School of Dental Medicine, University of Belgrade, Serbia.
†Department of Orthodontics, School of Dental Medicine, University of Belgrade, Serbia

Corresponding author:
Jelena Juloski
Clinic for Pediatric and Preventive Dentistry, School of Dental Medicine, University of Belgrade, Serbia.
Address: Doktora Subotića Starijeg 11, 11000 Belgrade, Serbia
Email: jelena.juloski@stomf.bg.ac.rs
Phone: +381112684581
Abstract

**Background/Aim.** Good undergraduate education is necessary to overcome the reluctance of dentists to use the rubber dam. The aim was to assess dental students' knowledge, training skills, attitudes, and opinions concerning the use of the rubber dam in order to isolate an operation field. **Methods.** A 34-item original questionnaire was distributed to 130 final year students. The questions were divided into four segments: general information; rubber dam-related knowledge and training skills; opinions and attitudes regarding the use of rubber dam; opinions on the intended future use of rubber dam. **Results.** All students confirmed that they had theoretical lessons about rubber dam and that the advantages of the rubber dam were pointed out. During practical courses, 34% of students observed rubber dam placement and 10% of them placed the rubber dam on their own or with assistance. Most of the students (88%) did not feel capable of using the rubber dam on their own. Less than half of the students (38%) believed that adequate isolation of the operating field is possible without the rubber dam. Sixty-four percent of students considered that rubber dam was not uncomfortable for the patients. More than half of the students were willing to use the rubber dam in their future practice. Almost all of them planned to gain additional postgraduate training. **Conclusion.** Students have solid theoretical knowledge about the rubber dam, they are aware of its importance and have a positive attitude towards the rubber dam use. However, their practical training and skills are poor and insufficient for independent rubber dam use. **Keywords:** Rubber Dam; Dental Students; Education.
Apstrakt

Uvod/Cilj. Osnovni preduslov za prevazilaženje odbojnosti stomatologa prema upotrebi koferdama jeste kvalitetno obrazovanje stečeno tokom osnovnih studija. Cilj ovog rada bio je da se proceni znanje studenata, veštine i obučenost za rad, njihovi stavovi i mišljenja u vezi sa upotrebom koferdama u izolaciji radnog polja. Metode. Sto trideset studenata završne godine Stomatološkog fakulteta popunjavalo je originalni upitnik od 34 pitanja, koja su bila podeljena u četiri segmenta: opšte informacije; znanje i obučenost za rad sa koferdamom; mišljenja i stavovi o upotrebi koferdama; mišljenja o korišćenju koferdama u budućem radu. Rezultati. Svi studenti su potvrdili da su imali teorijsku nastavu o izolaciji radnog polja koferdamom i da im je ukazano na njegove prednosti. Tokom praktičnih vežbi, 34% studenata je posmatralo postavljanje koferdama, dok je 10% njih samostalno postavilo koferdam. Manje od polovine studenata (38%) verovalo je u mogućnost odgovarajuće izolacije radnog polja i bez upotrebe koferdama. Sva tri smatra sa koferdamom i da je u mogućnosti da koristi koferdam u svom budućem radu. Skoro svi studenti planirali su dodatno obučavanje za rad sa koferdamom, nakon završetka osnovnih studija. Zatim. Studenti imaju solidno teorijsko znanje o upotrebi koferdama, svesni su njegovog značaja i imaju pozitivan stav prema upotrebi koferdama. Njihova praktična obuka i veštine nedovoljne su i ne omogućavaju im da samostalno postave koferdam u cilju izolacije radnog polja.

Ključne reči: Koferdam; Studenti stomatologije; Obrazovanje.
Isolation with Rubber Dam: Knowledge, Training and Attitudes of Final Year Dental Students

Introduction

The use of the rubber dam is universally acknowledged as an ideal method for performing dental treatments completely free of saliva and represents the crucial element for achieving an absolutely dry operating field.\textsuperscript{1-3} It also provides retraction and protection of the soft tissues, better visibility and aseptic conditions of the operating field, reduction of infectious pathogens in the aerosol, and prevention of aspiration or ingestion of instruments or irrigants.\textsuperscript{4-7} Dental practitioners are encouraged and required to use rubber dam in their daily practice, as rubber dam is considered an essential factor that significantly influences the success and durability of dental treatments.\textsuperscript{8-10}

Despite scientific evidence and official recommendations,\textsuperscript{11,12} dentists seem reluctant to use the rubber dam, as many recent studies report fairly low overall rate of rubber dam usage.\textsuperscript{13-16} The most common reasons reported for its underuse were inconvenience and difficulty in use, insufficient and inadequate training, prolonged time of treatment, cost of equipment, as well as the assumption that patients would not accept it.\textsuperscript{6,13,14,17} Interestingly, these obstacles were usually cited by dentists who did not use rubber dam regularly.\textsuperscript{13,18}

Among irregular rubber dam users, the factors found to influence the decision to use rubber dam included the type of treatment, material selection, and region of the mouth requiring treatment. Endodontic treatments are most frequently performed under rubber dam.\textsuperscript{14,17,19} Regarding restorative treatments, the rubber dam was more often used for composite than for amalgam restorations, for treatment of posterior than of anterior teeth, and in the lower compared to the upper jaw.\textsuperscript{14,17,19}

Qualifying school\textsuperscript{13} and graduate training intensity\textsuperscript{20} also affect a rubber dam use. It was shown that recently graduated and younger dentists used the rubber dam more frequently than their older colleagues.\textsuperscript{21} Also, there was a clear discrepancy in what dentists are taught in dental schools and in the way they practice after graduation in terms of rubber dam use.\textsuperscript{16} Even final year dental students believed that their use of rubber dam would decrease once they have left school and began working in independent practice.\textsuperscript{22} Previous
studies reported students' insufficient theoretical knowledge about the importance of rubber dam,\textsuperscript{23,24} and possible negative perceptions associated with the rubber dam use.\textsuperscript{22,25}

There is a general agreement that acquiring knowledge and skills for the proper use of rubber dam should be a fundamental part of education in dental schools. Giving students a good theoretical background and allowing them to acquire manual dexterity during the studies should give them the confidence to use rubber dam in the future. To the best of the authors' knowledge, there are no scientific data on the prevalence of rubber dam use among Serbian dentists, nor are there data on whether and how rubber dam is taught in dental schools. Therefore, the purpose of the present study was to assess knowledge and training skills, as well as attitudes and opinions towards the use of rubber dam among the final, fifth-year dental students attending the School of Dental Medicine, University of Belgrade, Serbia.

**Methods**

A 34-item original questionnaire, designed by the authors for the purpose of the study, was distributed to 130 fifth-year students of the largest public dental school in Serbia, School of Dental Medicine, the University of Belgrade. The questionnaire included “open“ and “closed“ questions, which were divided into four segments: (1) general information regarding the students' attendance at practical and theoretical courses; (2) rubber dam-related knowledge and training skills; (3) opinions and attitudes regarding the use of rubber dam; (4) opinions on the intended future use of rubber dam in their independent practice. The study protocol for this observational cross-section study was approved by the Ethics Committee. Students were allowed to decline participation in the study. All completed questionnaires were collected anonymously. Descriptive analyses of the data gathered from the questionnaires were performed using the statistical program IBM SPSS for Mac (Version 21.0 Chicago, IL, USA).

**Results**

Of 130 questionnaires distributed, 108 were adequately completed and returned and were included in the study (response rate of 83.08%).
**General Information**

All students (100%) reported that they were attending all practical courses regularly. Regarding theoretical classes, 44 of the students (41%) were regular attendants, while the rest of them (64 students, 59%) attended theoretical courses irregularly.

**Knowledge and Practical Skills**

All students that regularly attended theoretical courses (44 students) reported that they have been taught about rubber dam in classes and that the advantages of the rubber dam over relative isolation with cotton rolls and saliva ejectors were pointed out. Twenty-one of them (48%) considered that the topic has been covered in detail, 18 students (41%) reported that it was covered superficially, while 5 of them (11%) claimed that the topic was only mentioned. Figure 1 shows the distribution of responses regarding the subjects that had theoretical lessons about rubber dam that were obtained only from the students that regularly attended theoretical courses.

During practical courses, 37 students (34%) observed rubber dam placement, and 11 students (10%) placed the rubber dam on their own or with teacher’s assistance. Nine students placed rubber dam only once, while two students placed rubber dam two times in different practical courses. In total, rubber dam has been placed 14 times - five times in restorative dentistry, five times in pediatric dentistry and four times in endodontics.

Ninety-five students (88%) answered that theoretical and practical training obtained during studies is not sufficient for them to use the rubber dam on their own. Half of them (56 students, 52%) have searched for more information about the rubber dam, mainly on the Internet.

**Opinions and Attitudes**

The overview of the responses to "yes/no" questions related to the students' opinion and attitude towards the use of the rubber dam is presented in Table 1.

The majority of students (55%) thought that rubber dam use would decrease the duration time of the treatment, while others thought it would increase (28%) or have no influence (17%) on the duration of the treatment.
When asked to express their opinion on the benefit of rubber dam use, 64% considered it beneficial for dental interventions in both upper and lower jaw, while the remaining students (36%) thought it was more beneficial for interventions in the lower jaw. Sixty-two percent of students agreed that it is equally important for the treatment of anterior and posterior teeth, whereas 38% thought it was more useful for posterior teeth. Half of the students (50%) reported that the rubber dam was useful for both composite and amalgam restorations, while 42% considered it useful only for composite restorations.

Figure 2 shows the students' opinion about the most difficult step during the rubber dam application.

Opinions on the Intended Future Use

The majority of students (64%) reported that they were willing to use the rubber dam in their future practice and 27% would decide whether to use the rubber dam or not, depending on the type of the operative procedure or the situation they encounter (Figure 3), and 9% of the students did not plan to use it at all. Almost all of them (84%) planned to gain additional postgraduate training in different ways (Figure 4).

Discussion

Although teaching students about the rubber dam has been part of dental school training for decades, there is worldwide scientific evidence showing its limited use among dental professionals. The most important measure proposed to overcome the reluctance of dentists to use the rubber dam is better undergraduate education and training. Investigations among dental students, using questionnaires as a research instrument, are often conducted as a helpful tool to identify their knowledge and perceptions of the rubber dam, as well as to reveal potential problems in the educational process.

In the present study, all students that regularly attended theoretical courses confirmed that during lectures they have learned about the rubber dam and its advantages. Apart from restorative dentistry and endodontics, attention to rubber dam was given also in pediatric dentistry lessons, indicating the necessity of using the rubber dam in pediatric patients as
well. However, more than half of the participants have never observed or performed rubber dam placement during clinical training. This discrepancy between what is taught and how clinical procedures are being performed may be confusing for the future dentists. Considering almost complete lack of practical training, it is not surprising that almost 90% of students did not believe that they were capable of using the rubber dam on their own. All of the mentioned facts could explain the rubber dam underuse in independent practice after graduation from dental school.

Various results could be found in the literature with regards to the students' use of rubber dam on adult patients. In Saudi Arabia, dental students used rubber dam almost always, while in Ireland and the UK the majority of students used rubber dam occasionally. When it comes to pediatric patients, more consistent findings were reported - the rubber dam was used rarely or never. Interestingly, in the present study almost equal number of students placed rubber dam during restorative dentistry, endodontics, and pediatric dentistry practical courses.

One of the segments that should be covered in dental schools is the legal aspect of rubber dam placement. In case when rubber dam isolation is not performed and an endodontic instrument is inhaled by the patient, a medicolegal aspect of negligence is impossible to defend. Patient safety during dental treatment is essential from the practitioner's as well as the patient's point of view. Although it does not happen very often, there are some reports of inhalation and ingestion of endodontic instruments during root canal treatment performed without rubber dam isolation.

The present study shows that, despite little experience with the rubber dam, all students seemed to be certain about the necessity of acquiring knowledge and skills for rubber dam use during studies. They were convinced that rubber dam isolation has advantages compared to cotton rolls and saliva ejectors and that the success of endodontic treatment depends on rubber dam use. However, around 40% of students still believed that adequate isolation of the operating field for either restorative or endodontic procedures is possible without the use of the rubber dam. These results support earlier findings, but it should be noted that significant differences existed between the schools when more than one school was investigated. Furthermore, various factors, such as clinical procedure, choice of material being placed, and the jaw in which treatment is performed, were found to influence the use of rubber dam. In this study, more than half of the participants
believed that rubber dam was beneficial for both upper and lower jaw, anterior and posterior teeth, and composite and amalgam restorations.

Considering that one of the frequent reasons mentioned for rubber dam underuse is its difficult application, around 70% of the students did not think it was a difficult and complicated procedure, nor that it was more difficult than other procedures they regularly perform. This is in contrast to the results of other studies, probably because the students that participated in the present study observed the procedure, but did not perform rubber dam placement by themselves. Consequently, the vast majority of students were not sure concerning the most difficult step during rubber dam placement. The second most frequent response was clamp placement, similar to a previous study that reported clamp selection and its adaptation as the most complicated step for students. Conversely, in another research, most students were confident regarding which clamp to use, but the most cited difficulty in rubber dam appliance was tight contacts. Moreover, students had divided opinion on whether assistance was required for rubber dam placement. In another study students generally believed that assistance was not necessary for rubber dam application, while Imbery et al. reported that students particularly struggled with rubber dam placement when they were working alone and that they preferred if the assistant was available.

It is students and dentists common belief that patients have negative attitude towards rubber dam. In the present study, around 65% of students considered that application of the rubber dam did not make dental procedures less comfortable for the patients, which is in line with the results reported by Mala et al. When patients were asked, the majority of them had a positive experience with the rubber dam and preferred it to be used at their next appointment. Rubber dam was acceptable even to pediatric dental patients.

The students involved in the present research were not particularly worried about the time needed for rubber dam application. Less than 30% of students thought that placing rubber dam would increase the time of treatment, which is opposite to the opinions of the students from another research. It was proved that it takes only 4 to 5 minutes for students to apply the rubber dam and even less time for the dentists. Probably, calculating the time that would subsequently be saved throughout the procedure performed with the
rubber dam, most of the students in this research considered that the overall time of the procedure would be shorter.

The financial aspect, i.e. the fact that cost of the equipment and treatment cost increase, is one of the widely discussed factors that might influence the rubber dam use.\textsuperscript{6,13,14,17} However, it is obvious that a technique with clear infection control has benefits, and medico-legal implications should not be excluded from use for reasons of cost.\textsuperscript{14} This was confirmed by a study where no respondent referred to cost as a reason for not using the rubber dam.\textsuperscript{17} While most of the students in this study thought that rubber dam purchase does not require significant financial resources, it could be assumed that finances would have a more significant impact on their attitude once they start working in the independent private practice.

Even though only a small number of students used rubber dam during their studies, the encouraging fact is that around 60\% of them plan to use it regularly in their future work, suggesting their positive attitude and commitment to its use. As expected,\textsuperscript{14,17,19} among those who intend to use rubber dam only for certain clinical procedures, endodontic treatment would be the one that, in their opinion, requires rubber dam application. Another anticipated situation that could potentially urge them to use the rubber dam is when it is difficult to maintain the operative filed dry with cotton rolls and saliva ejectors. Nevertheless, final year dental students that participated in this study did not feel that they were sufficiently trained to use rubber dam on their own in the future, as almost all of them plan to gain additional postgraduate training, mainly through scientific meetings and workshops and from more experienced colleagues.

Based on the results of this study it could be concluded that students have solid theoretical knowledge about the rubber dam, they are aware of its importance and have a positive attitude and enthusiasm towards rubber dam use. On the other hand, their practical training and skills are poor and seem to be insufficient for independent rubber dam use. It is necessary to dedicate more attention to the rubber dam isolation technique throughout undergraduate practical courses so that after graduating dental students can implement acquired knowledge and skills in their practice. To avoid confusion among students, teachers in dental schools should be consistent and eliminate the discrepancy between how they perform dental procedures in the clinic and what they teach in the classroom.
References

1. Marshall K. Rubber dam. Br Dent J 1998; 184(5):218-9.
2. Mackay R, St Peter C. Rubber dam purpose. Br Dent J 2008; 205(6):295-6.
3. Oyster DK. Rubber dam use. J Am Dent Assoc 2016; 147(5):316.
4. Cochran MA, Miller CH, Sheldrake MA. The efficacy of the rubber dam as a barrier to the spread of microorganisms during dental treatment. J Am Dent Assoc 1989; 119(1):141-4.
5. Mackay JR. Rubber dam in endodontics. Br Dent J 2002; 193(3):126.
6. Ahmad IA. Rubber dam usage for endodontic treatment: a review. Int Endod J 2009; 42(11):963-72.
7. Al-Amad SH, Awad MA, Edher FM, Shahramian K, Omran TA. The effect of rubber dam on atmospheric bacterial aerosols during restorative dentistry. J Infect Public Health 2017; 10(2):195-200.
8. Wang Y, Li C, Yuan H, Wong MC, Zou J, Shi Z, et al. Rubber dam isolation for restorative treatment in dental patients. Cochrane Database Syst Rev 2016; 9:CD009858.
9. Keys W, Carson SJ. Rubber dam may increase the survival time of dental restorations. Evid Based Dent 2017; 18(1):19-20.
10. Webber J. Endodontics: No rubber dam, no root canal. Br Dent J 2017; 222(3):142.
11. European Society of Endodontology. Quality guidelines for endodontic treatment: consensus report of the European Society of Endodontology. Int Endod J 2006; 39(12):921-30.
12. American Academy on Pediatric Dentistry Clinical Affairs Committee - Pulp Therapy subcommittee; American Academy on Pediatric Dentistry Council on Clinical Affairs. Guideline on pulp therapy for primary and young permanent teeth. Pediatr Dent 2008; 30(7 Suppl):170-4.
13. Whitworth JM, Seccombe GV, Shoker K, Steele JG. Use of rubber dam and irrigant selection in UK general dental practice. Int Endod J 2000; 33(5):435-41.
14. Lynch CD, McConnell RJ. Attitudes and use of rubber dam by Irish general dental practitioners. Int Endod J 2007; 40(6):427-32.
15. Madarati AA. Why dentists don't use rubber dam during endodontics and how to promote its usage? BMC Oral Health 2016; 16:24.

16. Ahmed HM, Cohen S, Levy G, Steier L, Bukiet F. Rubber dam application in endodontic practice: an update on critical educational and ethical dilemmas. Aust Dent J 2014; 59(4):457-63.

17. Hill EE, Rubel BS. Do dental educators need to improve their approach to teaching rubber dam use? J Dent Educ 2008; 72(10):1177-81.

18. Gilbert GH, Riley JL, Eleazer PD, Benjamin PL, Funkhouser E, National Dental PBRN Collaborative Group. Discordance between presumed standard of care and actual clinical practice: the example of rubber dam use during root canal treatment in the National Dental Practice-Based Research Network. BMJ Open 2015; 5(12):e009779.

19. Kapitan M, Sustova Z. The use of rubber dam among Czech dental practitioners. Acta Medica (Hradec Kralove) 2011; 54(4):144-8.

20. Joynt RB, Davis EL, Schreier PH. Rubber dam usage among practicing dentists. Oper Dent 1989; 14(4):176-81.

21. Koshy S, Chandler NP. Use of rubber dam and its association with other endodontic procedures in New Zealand. NZ Dent J 2002;98(431):12-6.

22. Mala S, Lynch CD, Burke FM, Dummer PM. Attitudes of final year dental students to the use of rubber dam. Int Endod J 2009; 42(7):632-8.

23. Ryan W, O'Connel A. The attitudes of undergraduate dental students to the use of the rubber dam. J Ir Dent Assoc 2007; 53(2):87-91.

24. Imbery TA, Greene KE, Carrico CK. Dental dam and isovac usage: factors influencing dental students' decisions on isolation techniques. J Dent Educ 2019; 83(4):474-482.

25. Tanalp J, Kayatas M, Can ED, Kayahan MB, Timur T. Evaluation of senior dental students' general attitude towards the use of rubber dam: a survey among two dental schools. ScientificWorld Journal 2014; 2014:290101.

26. Marshall K, Page J. The use of rubber dam in the UK. A survey. Br Dent J 1990; 169(9):286-91.

27. Gilbert GH, Litaker MS, Pihlstrom DJ, Amundson CW, Gordan VV, DPBRN Collaborative Group. Rubber dam use during routine operative dentistry procedures: findings from the Dental PBRN. Oper Dent 2010; 35(5):491-9.
28. Imbery TA, Carrico CK. Dental dam utilization by dentists in an intramural faculty practice. Clin Exp Dent Res 2019; 5(4):365-76.

29. Al-Sabri FA, Elmarakby AM, Hassan AM. Attitude and knowledge of isolation in operative field among undergraduate dental students. Eur J Dent 2017; 11(1):83-8.

30. Reid J, Callis P, Patterson CJ. Rubber dam in clinical practice. London: Quintessence Publishing Co; 1991.

31. Kuo SC, Chen YL. Accidental swallowing of an endodontic file. Int Endod J 2008; 41(7):617-22.

32. Susini G, Pommel L, Camps J. Accidental ingestion and aspiration of root canal instruments and other dental foreign bodies in a French population. Int Endod J 2007; 40(8):585-9.

33. Stewardson DA, McHugh ES. Patients' attitudes to rubber dam. Int Endod J 2002; 35(10):812-9.

34. Kapitan M, Hodacova L, Jagelska J, Kaplan J, Ivancakova R, Sustova Z. The attitude of Czech dental patients to the use of rubber dam. Health Expect 2015; 18(5):1282-90.

35. Madarati A, Abid S, Tamimi F, Ezzi A, Sammani A, Shaar MBAA, et al. Dental-dam for infection control and patient safety during clinical endodontic treatment: preferences of dental patients. Int J Environ Res Public Health 2018; 15(9):2012.

36. McKay A, Farman M, Rodd H, Zaitoun H. Pediatric dental patients' attitudes to rubber dam. J Clin Pediatr Dent 2013; 38(2):139-41.
### Tables

Table 1. The responses to "yes/no" questions related to the students' opinion and attitudes towards the use of the rubber dam.

| Question                                                                 | Answer |          |          |
|--------------------------------------------------------------------------|--------|----------|----------|
| Do you think it is necessary to provide students with basic knowledge and practical training on the use of the rubber dam during the undergraduate studies? | Yes n (%) | 105 (97%) | 3 (3%)   |
| Do you think that achieving adequate isolation of the operating field for either endodontic or restorative procedures is possible without the use of the rubber dam? | No n (%) | 41 (38%)  | 67 (62%) |
| Do you think that the rubber dam has certain advantages compared to the isolation with cotton rolls and saliva ejectors? | Yes n (%) | 108 (100%) | 0 (0%)   |
| Do you think that the success of the endodontic treatment is higher if the operating field is isolated with the rubber dam than with cotton rolls and saliva ejectors? | Yes n (%) | 102 (94%)  | 6 (6%)   |
| Do you think that rubber dam placement is a difficult and complicated procedure? | Yes n (%) | 35 (32%)  | 73 (68%) |
| Do you think that rubber dam placement is more difficult than other procedures you regularly perform as part of your practical classes? | Yes n (%) | 38 (35%)  | 70 (65%) |
| Do you think that the help of a dental assistant is necessary for the rubber dam placement? | Yes n (%) | 55 (51%)  | 53 (49%) |
| Do you think that dental treatment is less comfortable for patients if the rubber dam is used? | Yes n (%) | 39 (36%)  | 69 (64%) |
| Do you think that significant financial resources are required for rubber dam purchase? | Yes n (%) | 36 (33%)  | 72 (67%) |

**Figure legends**
Figure 1. Distribution of students’ responses regarding the subjects that had theoretical lessons about the rubber dam (only responses obtained from 44 students that regularly attended theoretical courses were taken into consideration).

Figure 2. Distribution of students’ responses on the most difficult step during the rubber dam application.

Figure 3. Students' responses regarding the type of operative procedure they would use the rubber dam for.
Figure 4. Students' responses regarding the plans for the postgraduate training in rubber dam placement.
Received on March 25, 2021.
Revised on May 15, 2021.
Accepted September 9, 2021.
Online First September, 2021.