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Research Article

**EXPLORING DENTAL STUDENTS' PERCEPTION AND
ACCEPTANCE OF RUBBER DAM IMPLEMENTATION IN
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Abstract:

Objective: During dental school, there is a lot of focus on teaching students how to employ rubber dams in the two main fields of operational dentistry and endodontics. The goal of the current research was to assess dental students' perceptions of the usage of rubber dams in operative dentistry medical centers, with a particular focus on their perceptions of the potential applications of these materials after graduation.

Methods: Interns in a dental program at Punjab Dental Hospital in Lahore, Pakistan, were subjected to a systematic questionnaire-based study. The questions focused on latex allergy, training, choosing the right jaws to apply the rubber dam, and possible uses of the rubber dam in practice.

Results: A statistical analysis was performed on a questionnaire that was fully completed by all 110 participants. Approximately 80.9 percent of the students felt that they had appropriate and acceptable instructions for installing rubber dams, and 59.1 percent believed that they should first check to see whether they are allergic to latex before installing rubber dams. And 85 percent of the students said they would employ rubber dams for all operations when they graduated.

Conclusions: This group of prospective dentists responded well to the use of rubber dams during restorative operations, which is encouraging.

Keywords: operative dentistry, rubber dam, perception

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INTRODUCTION:

Dr. Sanford Barnum first brought the rubber dam system to the globe in 1864. Since then, it has undergone several changes, and it is now a crucial component of dental treatments. The use of rubber dams is recommended everywhere as a means of infection control, aseptic field creation, operating area isolation, and prevention of ingesting or aspirating dental materials and/or tools. Additionally, it comforts patients and helps the operator safeguard delicate tissue. [1,2] Rubber dams are often utilized in endodontic therapy and operational dentistry. To deliver high-quality treatment, textbooks in these specialties emphasize and advise using rubber dams during endodontic and surgical operations. Additionally, from a medicolegal perspective, it is essential to employ rubber dams to prevent malpractices; failing to do so might have major repercussions.[3]

Because "no other approach, medication, or equipment employed in dentistry has been so widely recognized and recommended by recognized professionals and so neglected by practicing dentists," it is now time for dental professionals to assess their practices and implement the isolation protocol.[4] In addition, dental schools emphasize the use of rubber dams from the student's very first interaction with a patient throughout the dental graduating program. However, it is necessary to frequently and prospectively assess whether trainees will strongly embrace the rubber dam practice throughout their clinical practice. [5,6] As a result, the institution commits to assessing the students' attitudes towards its utilization during graduation. straightforward questionnaire-based surveys are a straightforward way to do this kind of evaluation.[7] The objective of the current research was to assess dental students' perceptions of the usage of rubber dams in operative dentistry clinics. It also emphasized the assessment of the potential use of the rubber dam in general dental practice after graduation.



Figure 1: Rubber dam

METHODS:

At the Punjab Dental Hospital in Lahore, 110 students enrolling in the dentistry program received a standardized questionnaire with 12 questions. To elicit detailed and precise information from the participants, the questionnaire had both open-ended and closed-ended questions. The students were informed that participation was completely optional and that their privacy would be preserved before the questionnaire was sent out.

There was a high degree of involvement and interest in the research as shown by the 110 students' willingness to participate in the survey and complete the questionnaires. To make the statistical analysis that followed easier to do, the questionnaires that had been gathered were meticulously organized and inserted into an Excel spreadsheet. The percentages of replies were calculated for each question using simple mathematical calculations to show the data understandably.

The questionnaire's inclusion of both open-ended and closed-ended questions allowed for a thorough examination of the student's viewpoints and experiences. While the open-ended questions allowed participants to express their ideas and views in their own words, the closed-ended questions offered specified answer alternatives that enabled quantitative analysis. This mix of question types sought to gather a variety of data and provide a comprehensive grasp of the students' perspectives.

RESULTS:

A questionnaire was completed by 110 participants in total, and their answers were input for statistical evaluation. The results showed that a substantial proportion of students (80.9%) believed they had received sufficient instruction for installing rubber dams. Furthermore, 59.1 percent said that before utilizing a rubber dam, they should find out whether they are allergic to latex.

The students recognized the advantages of using rubber dams, with 91.8% confirming that it made it easier to implant restorations in the posterior and 85.4% saying it gave them unobstructed access. However, a significant majority of students (87.3%) thought that the insertion of rubber dams made radiography operations difficult and that it prolonged treatment time. Particularly, 44.5% needed help placing the rubber dam.

Regarding the use of rubber dams, opinions were divided. Rubber dams ought to be utilized in both jaws, according to 50% of the students, whereas 44.5%

of them chose to reserve their preference for mandible tooth repairs.

The vast majority of students (86.4%) felt that rubber dams increased the lifespan of restorations compared to placements without them. The ability to create an aseptic workspace was rated as the most valuable benefit of using rubber dams by 45.3 percent of students, followed by the simplicity of cavity

preparation and repair (26.4%). Additionally, 96.4% of the students thought that cavity preparation should come first, followed by the insertion of the rubber dam. The majority of graduates (85.5%) planned to employ rubber dams throughout all operations. Fewer students (10.9% and 3.6%) intended to employ rubber dams particularly for restorative operations and root canal treatments, respectively. (Table 1)

Table 1: Rubber dam questionnaire and the responses

		n	%
Restorations installed with a rubber dam last longer than those installed without one.	Yes/No	95	86.4
Application of the rubber dam requires assistance.	Agree/Disagree	49	44.5
Rubber dam prolongs the length of the treatment process.	Agree/Disagree	68	61.8
Radiographic procedures are problematic because of rubber dams.	Agree/Disagree	96	87.3
Rubber dam makes it easier to place repairs.	Yes/No	94	85.4
Once the rubber dam has been put in, posterior restorations may be fitted more readily.	Yes/No	101	91.8
Do you check your patients for latex allergies before using rubber dams?	Yes/No	65	59.1
Do you believe you received sufficient and favorable training on rubber dams?	Yes/No	89	80.9
Which benefit of the rubber dam do you consider to be its greatest?			
All		17	15.4
readily available cavity preparation and repair services		28	25.5
Avoiding ingesting or aspirating objects or particles		17	15.5
sterile work environment		48	43.6
The need for a rubber dam increases while operating in the			
Both		55	50
Maxilla		6	5.5
Mandible		49	44.5
Following cavity preparation and before placing the restorative material		4	3.6
When in the repair process do you utilize rubber dam? after sedation and before cavity preparation		106	96.4
Following graduation:			
I only plan to use it for root canal therapy.		12	10.9
I only plan to utilize it for restorative operations.		4	3.6
I'm going to utilize the rubber dam for all of the recommended processes.		94	85.5

The survey findings showed that the majority of students believed they had gotten sufficient instruction for installing rubber dams. The advantages of using rubber dams, such as making access clear and making it easier to put posterior restorations, were well known. However, issues with radiography techniques and prolonged treatment times were highlighted as problems. The majority of students felt that using rubber dams increased the durability of restorations and that they were primarily useful for establishing an aseptic work environment and facilitating cavity preparation and repair.

DISCUSSIONS:

A rubber dam is a useful tool for endodontic and surgical treatments that tackles quality and safety concerns. Rubber dam unquestionably aids in both time management and patient comfort during dental treatments. However, the use of rubber dams is met with resistance in general dentistry. Future general dentists will be influenced to use rubber dams by receiving application training during dental school. As a result, dental schools must frequently assess the student's progress throughout clinical training. [8,9]

110 students took part in the current study's questionnaire-based design and responded to its 12 structured questions. The purpose of this research was to assess dentistry students' attitudes toward the use of isolation practice during restorative and other dental treatments. Additionally, it aimed to comprehend how students saw their future general dentistry practice, where they would use what they learned in dental school.

In this research, 80.9% of the students responded positively when asked about receiving appropriate and acceptable instruction for installing rubber dams. However, 64.6% of participants in their survey believed that proper training was necessary. Furthermore, we discovered that 59.1% of students enquired about patients' latex allergies before the application of rubber dams.[10] Similar research found that 66.7% of students questioned their patients about latex sensitivity before isolating them.[11] In our poll, 85.4% and 91.8% of the students agreed that rubber dam placement facilitates clear access and makes it easier to put posterior repair, respectively. Another research on dentistry students in their last year came to similar conclusions.[12] The majority of the students in our survey (87.3%) felt that rubber dam installation makes radiography procedures more difficult to complete. Additionally, research revealed that employing rubber dams presented challenges for students while producing radiographs.[13] This was in line with findings from different research on dental students and general practitioners. [14,15]

61.8% of the participants in the current research said that placing rubber dams makes therapy take longer. A previous study showed that 77.9% of the students required additional time for the implantation of dental dams, which prolonged the therapy. The rubber dam installation required cooperation from 44.5% of the pupils.[16] This may be explained by the difficulty of installing the rubber dam during the first training period; as the students become more familiar with the structure, the placement time can grow shorter.

According to the results of the current research, 86.4% of the students agree that using rubber dams increases the durability of restorations. According to a survey, students from both institutions shared the belief that rubber dams are necessary for effective isolation during surgical operations.[17] They also found that the majority of students from both universities (99% and 97.8%) preferred to respond that restorations done under rubber dam had better longevity than those not placed under rubber dam. This group may benefit greatly from further long-term studies that monitor repairs carried out with and without rubber dams. According to our research, 50 percent of students thought rubber dams should be used on both jaws, whereas 44.5% preferred to use them just for mandibular tooth restorations. This was in opposition to a prior trial. [18]

The ability to create an aseptic workspace was the rubber dam's greatest benefit (45.3%), followed by the simplicity of cavity preparation and repair (26.4%). Furthermore, in the current research, 15.5% of the students chose the option that using a rubber dam would help protect them from accidentally ingesting or aspirating objects or particles. In this respect, a survey revealed that 99% of the kids used rubber dams to isolate themselves. They added that continuous usage of a rubber dam might provide further protection by greatly reducing airborne microbial contamination during restoration operations.[19] However, this research indicated that extra safety measures, such as covering heads with appropriate protective clothing, are required when using rubber dams.[20]

In the current research, 96.4% of the participants agreed that placing a rubber dam should occur after administering local anesthesia and before beginning cavity preparation. However, this discovery runs counter to those of earlier studies.[21] In our poll, 50 percent said that putting rubber dams on both jaws was essential. The majority of students [22] regarded the mandible as the jaw in which the installation of a rubber dam was most important, which is in contrast to our data, which showed that 44.5% of students preferred to put seclusion in the lower jaw. However, the majority of pupils in the research [23] noted that the rubber dam is more important as they worked in the mandible.

A minimal percentage of rubber dams are used for isolation, according to several research on general dental populations. One of the causes is that there are differences in how rubber dams are seen throughout clinical training and in regular practice after graduation. In addition, elements including the clinical setting, the length of the clinical experience, and the

motivation to pursue further education play a crucial part in its implementation. However, it is the responsibility of dental schools to introduce its use throughout training so that a more cooperative generation of dental practitioners would begin using rubber dams. [24,25]

CONCLUSIONS:

The current research demonstrates dental students' favorable attitudes toward the usage of isolation during dental treatments. Students' confidence may be increased and the time needed for placement can be cut down by teaching efficient methods of applying rubber dams throughout practical education at dental schools. As a result, the students are more likely to get used to using rubber dams in their practice. However, it promotes doing more research on general dentists, particularly the working graduates of the institution, to understand the usage of rubber dams.

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