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Original Article

Assessment of Dentists Attitudes, Knowledge, Practices, and Challenges in Utilizing Rubber Dams for Restorative and Endodontic Procedures: An Online Questionnaire Survey

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ABSTRACT

Rubber dams are essential for dental procedures, ensuring isolation, patient safety, and better work efficiency for dentists. However, their use is often limited by challenges such as difficulty in application, time constraints, and inadequate training. This study aimed to assess the attitudes, knowledge, practices, and challenges to rubber dam use during among dentists in Tripoli, Libya. A cross-sectional online survey involving 165 dentists was conducted using a validated 26-item questionnaire. Data were analyzed using chi-square tests, with significance set at $p < 0.05$. Results showed that 67.9% of dentists had access to rubber dams, but only 64.8% used them. Lack of training during undergraduate studies was reported by 61.2%, and 42.4% identified inadequate training as the main barrier. Significant association were found between rubber dam use and gender, place of work, prior training, and years of practice. Although dentists expressed positive attitudes toward rubber dam use, barriers such as insufficient training, radiographic procedures, and time constraints hindered regular application. Enhanced training programs could improve acceptance rates.

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INTRODUCTION

Adequate control of the operating field is necessary for any dental procedure. Adequate room for instruments around the work area, excellent accessibility, visibility, and moisture control are all essential. The majority of restorative operations depend on the isolation techniques used to be successful [1,2]. A study by Heling and Heling that outlines the critical role of the rubber dam (RD) for each endodontic procedure is titled "Endodontic procedures must never be performed without the rubber dam" [3]. Eliminating the infection and preventing a reinfection of the root canal system are the main objectives of endodontic treatment. Therefore, retraction and access, injury prevention, and moisture control are the objectives of isolation in dentistry. For this purpose, strict aseptic procedures and high technical measurements are required. To do this, strict aseptic procedures must be followed, and saliva, blood, and other gingival fluids must be isolated [4]. These can be accomplished by direct or indirect methods. Direct methods procedures like rubber dams, cotton rolls and absorbent wafers, evacuator system and saliva ejectors, gingival retraction cord, and mouth props; whereas indirect methods include local anesthesia and medications like antianxiety, muscle relaxants [2].

The rubber dam was introduced to the dental profession by Sanford C. Barnum in 1864 [1,5]. Rubber dam is a small latex or non-latex sheet used to isolate one or more teeth from the oral environment in order to stop fluids or foreign items from entering or leaving the operating area [2]. Rubber dam protects the patient's oropharynx from the possible

aspiration or swallowing of instruments, medicaments, irrigating solutions and tooth/material debris. And subsequently the operator from legal responsibility should these mishaps happen. Additionally, it provides protection to the gingiva, tongue, lips, and cheeks from rotary instruments [1,6–8].

The gold standard for root canal treatment is the use of a rubber dam (RD). The American Association of Endodontists states in their position statement that, ‘‘Tooth isolation is the standard of care; it is integral and essential for any nonsurgical endodontic treatment. Only the dental dam isolation minimizes the risk of contamination of the root canal system by indigenous oral bacteria ’A [6,9]. According to Ingle et al in the Washington Study [10], inadequate root canal cleaning and obturation, which leaves bacteria behind, is a major contributor to root canal failure. The protocol followed for root canal therapy with the use of the RD can be nullified once the restorative dentist exposes a recently cleaned and obturated root canal to indigenous oral bacteria during post placement without an RD [6].

Rubber dams are still not commonly utilized in dentistry, despite their many advantages. Numerous factors, including patient acceptance concerns, application time requirements, high cost, and insufficient training, have been linked to their lack of application [1,8,11]. In a prior survey, 75% of participants answered that rubber dams are a mandatory requirement at the time of root canal treatment [11,12]. Furthermore, Lynch and McConnell discovered that 57% of dentists found placing rubber dams to be a difficult procedure and challenging [2]. Thus, it is noted that, despite rubber dams being considered the criterion standard, the studies show a considerable difference in attitudes, beliefs, and practices of dental practitioners [7].

In addition, numerous studies conducted in a variety of countries, including the United States and the United Kingdom, have revealed varied kinds of rubber dam use over time, offering information about practitioners' attitudes and beliefs regarding the use of rubber dams at different times [12]. To the best of our knowledge, the most studies have assessed knowledge, attitudes, and practices toward the use of rubber dams in dental practice [11]. Studies have been reported in other countries on rubber dam use among dentists and dental students [11,13–15]. There are no studies that discuss dental practitioners' opinions about utilizing rubber dams in the Tripoli, Libya. Hence, we hypothesized that a survey would yield additional information on how dental practitioners employ rubber dams. Therefore, this study aimed to assess the attitudes, knowledge, practices, and challenges toward the use of rubber dam during endodontic and operative procedures among dentists in Tripoli, Libya.

METHODS

Study Design and participants

This research employed a cross-sectional questionnaire survey design to investigate the current practices and attitudes of dentists in Tripoli, Libya toward rubber dam usage. A total of 165 dentists practicing in Tripoli, Libya participated in this study.

Data Collection

Data collection was conducted online using a well-designed, validated questionnaire. The questionnaire was distributed to participants via email and social media platforms from March 27, 2024 to September 24, 2024. The questionnaire consists of multiple-choice questions with options for single or multiple selections. The participants were required to answer all questions. The responses were obtained by online survey submission. The study did not include any questionnaire items with missing answers.

Questionnaire Development

The 26-item questionnaire. It was divided into two sections, section 1 (Demographics) this section gathered information about the dental practitioners, including: their gender, place of employment, occupation, specialty, and years of experiences. Section 2 (Rubber dams usage) this section focused on dentists' attitudes, knowledge, practices, and challenges related to rubber dam isolation during restorative and endodontic procedures. This section comprised 17 items focused on attitude and knowledge, 6 items assessing clinical practices, and 5 items exploring challenges associated with rubber dam application. Some questions could be categorized into multiple sections, depending on the specific focus.

Statistical Analysis

Recorded data were analyzed using the statistical package for social sciences, version 22.0 (SPSS Inc., Chicago, Illinois, USA). Quantitative data were expressed as mean± standard deviation (SD). Qualitative data were expressed as frequency and percentage. The frequency and percentage of the responses were calculated. A chi-square test was employed to test

the association between the independent variables and the responses to the questions. A p value <0.05 was considered statistically significant.

RESULTS

Socio-demographic data

Out of 165 patients, the 100 dentists (60.6%) were male and 65 dentists (39.4%) were female; 95 dentists (57.6%) worked in a hospital.; additionally, the most dentists were dental residents/researchers, with 112 dentists (67.9%); while 49 dentists (29.7%) were prosthodontics, and 79 dentists (47.9%) had years of practice > 10 years. A summary of the participants' descriptive statistics was presented in figure 1.

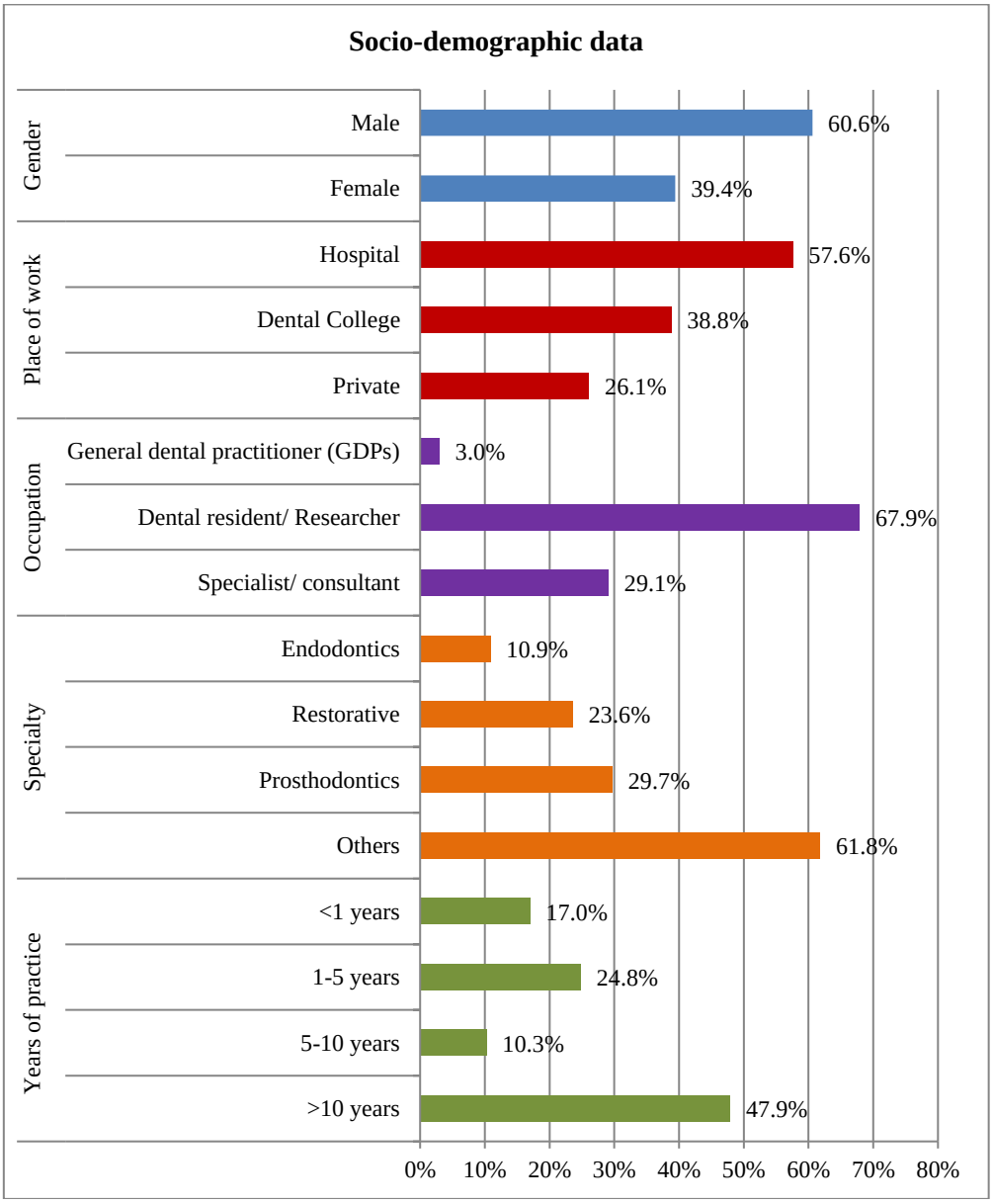

Figure 1. Percentage distribution of the studied dentists according to their socio-demographic data.

Assessment of dentists' attitudes and knowledge in utilizing rubber dams for restorative and endodontic procedures

The results shown that, most dentists (88.5%) believe the biggest advantage of rubber dams is a combination of factors. A large majority (58.8%) want to learn more about rubber dams and their use. Most dentists (73.9%) believe adequate isolation cannot be achieved without a rubber dam. The preferred method to learn more about rubber dams is through workshops and hands-on training (73.9%). While 61.2% of dentists did not receive adequate rubber dam training during their studies, 66.7% have received training after graduation (Table 1). Most dentists (75.8%) believe rubber dams are

necessary for endodontic treatment. The majority (66.1%) think rubber dams are important for both isolation and moisture control. Most dentists (70.3%) consider the tooth's location when deciding to use a rubber dam. The majority (63%) don't find rubber dams difficult to use. Most dentists (66.1%) don't believe rubber dam's waste time. A significant number (52.7%) think rubber dams can make radiographic procedures more difficult. A majority (44.2%) believe rubber dams can improve the success of post and core procedures. Most dentists (72.7%) agree that assistance is needed when applying a rubber dam. The majority (40%) apply the rubber dam immediately after anesthesia. Most dentists (48.5%) always use a rubber dam. The main reason dentists avoid using rubber dams is a lack of training (42.4%).

Statistically significant results have been observed linking the best way to improve knowledge varied significantly between different specialties with p-values of 0.001. The level of rubber dam training received during dental school differed significantly between different occupational groups with p-value of 0.015. The likelihood of receiving post-graduate rubber dam training varied significantly between dentists working in different place of work with p-value of 0.040. There was a significant correlation between dental specialty and the belief that rubber dams are necessary for endodontic treatment, p-value of 0.006. The location of a tooth significantly impacts the decision to use a rubber dam, and this decision varies significantly between different dental specialties with p-value of 0.021. There is a significant correlation between the belief that rubber dams waste time and occupation groups, p-value of 0.049. The difficulty of performing radiographic procedures with a rubber dam was significantly associated with both dental specialty and occupation groups, p-values of 0.018, 0.017 in respectively. The use of rubber dams during post and core procedures was significantly associated with the success of endodontic treatment. This association varied significantly between different places of work, occupations, and dental specialties with p-values of 0.039, 0,039, and 0.013 in respectively. The type of isolation method used was associated with gender, place of work, and years of practice, with p-values 0.041, 0.020, and 0.033 in respectively (Table 1).

Table 1. Number and percentage distribution of the studied dentists according to their attitude and knowledge in utilizing rubber dams for restorative and endodontic procedures practice (N=165).

Items	No.	%	P-value				
			Gender	Place of work	Occupation	Specialty	Years of practice
In your opinion, the greatest advantage offered by the rubber dam is?							
Aseptic working area	13	7.9%	0.627	0.187	0.919	0.327	0.506
Prevention of swallowing or aspirating particles or instruments	4	2.4%					
Easy access to cavity preparation and restoration	2	1.2%					
All of the above	146	88.5%					
Do you want to know more about rubber dams and their application?							
Yes	97	58.8%	0.190	0.924	0.156	0.753	0.065
No	15	9.1%					
Maybe	53	32.1%					
Do you think you can achieve adequate isolation without a conventional rubber dam?							
Yes	43	26.1%	0.481	0.078	0.214	0.158	0.777
No	122	73.9%					
What do you think the best way to enhance the knowledge about rubber dams? *							
Continuous dental education program – lectures	46	27.9%	0.111	0.249	0.680	**0.001****	0.930
Adding extra theory and clinical hours in bachelor of dental surgery training	31	18.8%					
Workshops and hands-on training	88	53.3%					
Have you received adequate training in the application of rubber dam during your study?							
Yes	64	38.8%	0.362	0.072	**0.015***	0.077	0.240
No	101	61.2%					
Have you ever been trained in using the rubber dam after graduation?							
Yes	110	66.7%	0.160	**0.040***	0.506	0.149	0.523
No	38	23.0%					
I trained but don't want to use it	17	10.3%					
Do you think the rubber dam is necessary in the endodontics treatment?							
Yes	125	75.8%	0.579	0.524	0.334	**0.006***	0.479

No	6	3.6%					
Probably	34	20.6%					
The most important use of the rubber dam is?							
In the upper teeth	3	1.8%	0.127	0.463	0.676	0.489	0.301
In the lower teeth	53	32.1%					
Both of them	109	66.1%					
Is the location of tooth affect your decision for using rubber dam?							
Yes	116	70.3%	0.197	0.110	0.828	**0.021***	0.658
No	49	29.7%					
Do you think the rubber dam is difficult to use?							
Yes	40	24.2%	0.137	0.456	0.055	0.335	0.238
No	104	63.0%					
Maybe	21	12.7%					
Do you think the rubber dam wasting time?							
Yes	41	24.8%	0.221	0.524	**0.049***	0.194	0.642
No	109	66.1%					
Maybe	15	9.1%					
Do you think the rubber dam makes radiographic procedure difficult?							
Yes	87	52.7%	0.062	0.072	**0.017***	**0.018***	0.607
No	65	39.4%					
Maybe	13	7.9%					
Do you think that the use of rubber dams during post and core procedures has an impact on the success of endodontically treated teeth?							
Yes	73	44.2%	0.216	**0.039***	**0.039***	**0.013***	0.249
No	28	17.0%					
I don't know	64	38.8%					
Assistance is necessary during rubber dam application							
Agree	120	72.7%	0.658	0.660	0.326	0.882	0.921
Disagree	31	18.8%					
I don't know	14	8.5%					
At what stage do you use the rubber dam?							
Immediately after anesthesia	66	40.0%	0.068	0.096	0.355	0.460	0.290
During preparing the access cavity	37	22.4%					
During the preparation of the root canals	29	17.6%					
During the obturation	13	7.9%					
I don't use RD	19	11.5%					
What kind of isolation method/s you use?							
Use sterile gauze	6	3.6%	**0.041***	**0.020***	0.640	0.089	**0.033***
I always use rubber dam	80	48.5%					
Use sterile cotton	72	43.6%					
Others	7	4.2%					
Why do some dentists choose not to use a rubber dam during dental procedures?							
Financial problem	13	7.9%	0.092	0.127	0.447	0.960	0.334
Not available	23	13.9%					
They don't have enough training for using rubber dam	70	42.4%					
Time consumption	38	23.0%					
Others	21	12.7%					

**Can be more than one answer. P-value related to Chi square test. P-value >0.05 is insignificant; *P < 0.05 is statistically significant; **P-value <0.001 is highly significant.*

Assessment of dentist's practices in utilizing rubber dams for restorative and endodontic procedures

The results shown that, most dentists (67.9%) have rubber dams available in their clinics. The majority (64.8%) use rubber dams with their patients. Most dentists (46.1%) ask patients about latex allergies before using a rubber dam. Most dentists (58.8%) report that their patients do not reject the use of a rubber dam. The most important use of a rubber dam is for both of them (66.1%). A significant number of dentists (52.7%) find that rubber dams can make radiographic procedures more difficult.

The availability of rubber dams in dental clinics was significantly associated with gender, place of work, and occupation with p-values of 0.001, 0.001, and 0.016 in respectively. The use of rubber dams with patients was associated with both the place of work and dental specialty, with p-values of 0.011, and 0.032 in respectively. The perception of whether rubber dams make radiographic procedures difficult was significantly associated with both the occupation and dental specialty groups, with p-values of 0.017, and 0.018 in respectively (Table 2).

Table 2. Number and percentage distribution of the studied dentists according to their practices in utilizing rubber dams for restorative and endodontic procedures practice (N=165).

Items	No.	%	P-value				
			Gender	Place of work	Occupation	Specialty	Years of practice
Is rubber dam available in your clinic?							
Yes	112	67.9%	**0.001****	**0.001****	**0.016***	0.224	0.275
No	53	32.1%					
Did you use a rubber dam for your patients?							
Yes	107	64.8%	0.051	**0.011***	0.068	**0.032***	0.128
No	58	35.2%					
Did you ask the patient if he had an allergy to latex before using the rubber dam?							
Yes	76	46.1%	0.637	0.247	0.233	0.188	0.231
No	72	43.6%					
I didn't use the rubber dam	17	10.3%					
Is the patient rejecting the rubber dam?							
Yes	54	32.7%	0.183	0.168	0.111	0.366	0.171
No	97	58.8%					
I don't use RD	14	8.5%					
The most important use of the rubber dam is?							
In the upper teeth	3	1.8%	0.127	0.463	0.676	0.489	0.301
In the lower teeth	53	32.1%					
Both of them	109	66.1%					
Do you think the rubber dam makes radiographic procedure difficult?							
Yes	87	52.7%	0.062	0.072	**0.017***	**0.018***	0.607
No	65	39.4%					
Maybe	13	7.9%					

*P-value related to Chi square test. P-value >0.05 is insignificant; *P < 0.05 is statistically significant; **P-value <0.001 is highly significant*

Assessment of dentist's challenges in utilizing rubber dams for restorative and endodontic procedures

The results shown that, some dentists (24.2%) think the rubber dam is difficult to use. Most dentists (66.1%) don't believe rubber dam's waste time. A significant number (52.7%) find that rubber dams can make radiographic procedures more difficult. Most dentists (72.7%) agree that assistance is needed when applying a rubber dam. The main reason dentists avoid using rubber dams is a lack of training (42.4%). The perception of whether rubber dam's waste time was significantly associated with the occupation groups, with p-value of 0.049. Also, the perception of whether rubber dams make radiographic procedures difficult was significantly associated with both the occupation and dental specialty groups, with p-values of 0.017, and 0.018 in respectively (Table 3).

Table 3. Number and percentage distribution of the studied dentists according to their challenges in utilizing rubber dams for restorative and endodontic procedures practice (N=165).

Items	No.	%	P-value				
			Gender	Place of work	Occupation	Specialty	Years of practice
Do you think the rubber dam is difficult to use?							
Yes	40	24.2%	0.137	0.456	0.055	0.335	0.238
No	40	24.2%					
Maybe	21	12.7%					

Do you think the rubber dam wasting time?							
Yes	41	24.8%	0.221	0.524	**0.049***	0.194	0.642
No	109	66.1%					
Maybe	15	9.1%					
Do you think the rubber dam makes radiographic procedure difficult?							
Yes	87	52.7%	0.062	0.072	**0.017***	**0.018***	0.607
No	65	39.4%					
Maybe	13	7.9%					
Assistance is necessary during rubber dam application.							
Agree	120	72.7%	0.658	0.660	0.326	0.882	0.921
Disagree	31	18.8%					
I don't know	14	8.5%					
Why do some dentists choose not to use a rubber dam during dental procedures?							
Financial problem	13	7.9%	0.92	0.127	0.447	0.960	0.334
Not available	23	13.9%					
They don't have enough training for using rubber dam	70	42.4%					
Time consumption	38	23.0%					
Others	21	12.7%					

*P-value related to Chi square test. P-value >0.05 is insignificant; *P < 0.05 is statistically significant; **P-value <0.001 is highly significant*

DISCUSSIONS

Rubber dams are the best way to isolate teeth during fillings and root canal treatments. If teeth aren't properly isolated from germs during treatment, the treatment might fail. Studies have shown that using rubber dams can make fillings last longer and improve the success of root canal treatments. However, not all dentists use rubber dams, and how often they're used varies from place to place [7,11,16,17]. During root canal procedures, rubber dams assist lower the airborne germ count. Because of this, they serve as essential for preventing infections, which is why many dental associations advise using them [11,18]. It seems logical that its use may have a role in reducing infection. Further investigation of this concept is warranted [19].

It was conducted this survey with 165 dentists in the Libyan Tripoli region to find out about their perspectives, knowledge, practices, and challenges with using rubber dams. Important information about the dental workforce may be obtained from the socioeconomic characteristics of the 165 dentists in this study. The gender distribution is notable, showing a slight male predominance (60.6%). This is consistent with previous studies that found similar patterns in dental professions [11,15,16]. This finding was contrary to the study done by Zou et al in China, in which no significant difference in rubber dam usage was found between male and female practitioners (P>0.05) [20]. However, it is important to note that the proportion of female dentists has been increasing over the years, reflecting changing societal norms and increased opportunities for women in healthcare. Regarding the workplace setting, a significant portion of the dentists (57.6%) were employed in hospitals in similar with the previous studies [11–13,20]. Our results corroborate Anabtawi et al.'s findings, showing a high rate of rubber dam usage (85%) among dentists in HealthPartners and Permanente Dental Associates. This suggests that a supportive organizational culture can significantly influence clinical practices [21]. This explained that a considerable number of dentists are involved in providing dental care within a broader healthcare setting, potentially contributing to a more integrated approach to patient care. However, further research is needed to explore the specific roles and responsibilities of hospital-based dentists. The majority of the participants were dental residents or researchers (67.9%), indicating a substantial representation of early-career dentists in the sample. Newly graduate dentists use RD more frequent than old one. The old dentists believed they can easily control the operative field from saliva contamination and other hazards similar results was obtained from survey done by Koshy and Chandler [22]. In contrast to other studies, our findings present conflicting evidence. Some participants reported consulting general practitioners more frequently [13,15,19], while others favored specialists [11]. This research highlights how important it is to give attention to the requirements and difficulties that young dentists encounter, such as offering sufficient training and support to ensure an easy integration into professional practice. A considerable number of dentists (47.9%) had over 10 years of experience, suggesting a mix of both experienced and early-career professionals. Similar findings were reported by Boreak N et al, Awooda EM & Alwan MS [13,15). The years of experience positively affected rubber dam use with more experienced operators having a higher frequency of usage. While other studies

contradicting this finding and reported that the rubber dam use declined with age [11]. The dentistry community can benefit from a broad exchange of knowledge and skills as a result of this variation in experience levels.

The results of this research revealed insight into the complex relationships between dentists' attitudes, knowledge, and practices around the use of rubber dams. Although a majority of dentists (88.5%) are aware of the many advantages of rubber dam isolation, such as better moisture control, increased visibility, and a lower risk of cross-contamination, a number of barriers prevent its widespread use. Rubber dams were considered as a useful tool for attaining the best possible clinical outcomes by a large percentage of dentists. In similar to the previous studies they believed there is a direct impact of using rubber dams on the success of endodontically treated teeth [11,15,23]. Significantly more, still reported a strong need for more training, demonstrating the necessity of comprehensive and practical training programs. This means that targeted training initiatives can significantly enhance dentists' skills and knowledge in rubber dam usage. Similar findings were reported by Boreak N et al. [13],and Joynt et al,. [24]. Rubber dams might appear time-consuming to some dentists, but the majority (66.1%) do not think they waste time. In consistence with previous study [13]. Process time can be reduced and efficiency increased with the use of effective methods and improved workflows. The capacity of dentists to employ rubber dams properly can be negatively affected by inadequate training received in dentistry school and insufficient access to post-graduate courses. The argument of insufficient time being a consideration is not entirely valid, as studies in the literature have demonstrated that, when proficient in its use, rubber dam application can be performed in approximately two minutes [19]. The study revealed that the perception and practice of rubber dam usage vary among different dental specialties. Endodontists, in particular, recognize the importance of rubber dam isolation for achieving successful treatment outcomes. This suggests that specialty-specific training programs can be tailored to address the unique needs of each dental specialty [13,19].

The results of this research offer important new information about dentists' attitudes and practices regarding the use of rubber dams. While a majority of dentists (67.9%) have rubber dams available in their clinics and utilize them with patients, significant variations exist in terms of their usage and perceived benefits. In similar to the previous studies [11,13]. This finding is in contrast with Unal et al, Peciuliene et al, Ibhawoh and Enabulele, Koshy and Chandler, Csinszka et al, Shanghvi et al, and Abraham et al. Who reported the use of rubber dam ranging from 4.5 to 57% among general practitioners [14,15,22,25–28]. The availability of rubber dams in dental clinics was significantly correlation with gender, place of work, and occupation. In consistence with previous research done by Alqahtani SM et al [11], while Boreak N et al , and Palmer et al reported that was no effect of gender on rubber dam use [13,29]. This means that the availability and use of rubber dams may be influenced by variables like gender, practice place, and specialty. Both the dentistry specialty and the workplace were linked to the use of rubber dams with patients. Dentists working in specific settings, such as hospitals or university clinics, may be more likely to use rubber dams due to stricter infection control protocols and a greater emphasis on best practices. Additionally, endodontists and other specialists who perform complex procedures may be more likely to utilize rubber dams to achieve optimal clinical outcomes. A significant number of dentists (52.7%) believe that rubber dams can complicate radiography processes. On the contrary to the previous study [13]. This result underlines the necessity for additional study and the creation of methods that reduce rubber dams' negative effects on radiography imaging. Although the majority of dentists acknowledge the value of rubber dams for isolation and moisture control, more work is required to encourage their regular application in clinical settings. This might include giving comprehensive education and training on rubber dam procedures in addition to addressing perceived challenges like patient discomfort and time restrictions [11,13,19].

The findings of this study highlight several challenges that dentists encounter when utilizing rubber dams for restorative and endodontic procedures. While rubber dams offer numerous benefits, including improved isolation, moisture control, and visibility, their adoption is hindered by certain obstacles [11,13,19]. A significant proportion of dentists (24.2%) perceive rubber dams as difficult to use. This may be due to a lack of adequate training or experience, as well as the technical challenges associated with rubber dam placement and removal [11,13,19,23]. A substantial number of dentists (52.7%) believe that rubber dams can make radiographic procedures more difficult. This perception may stem from challenges in positioning the X-ray source and film or digital sensor in the presence of the rubber dam. Most dentists (72.7%) agree that assistance is needed when applying rubber dams. This suggests that efficient rubber dam placement may require a team approach, involving dental assistants or hygienists.

CONCLUSION

This study highlights the importance of rubber dams in modern dentistry, yet underscores the significant challenges and barriers to their widespread adoption. The participants had a favorable attitude toward rubber dam use. The training, operator experience, and workplace are favorably associated with rubber dam use. Insufficient training, radiographic procedures, and time consumed of rubber dam were reported as the greatest barriers to regular usage. To promote the

optimal use of rubber dams, it is imperative to address these challenges through comprehensive training programs, streamlined techniques, and a focus on patient education. By doing so, clinical outcomes can be improved, enhance patient satisfaction, and elevate the standards of dental care.

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Conflicts of Interest
The authors declare that no conflicts exists.

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تقييم مواقف و معرفة و ممارسات و تحديات أطباء الأسنان في استخدام الحاجز المطاطي للإجراءات الترميمية و اللبية: دراسة وصفية عبر الإنترنت

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المستخلص

الحاجز المطاطي ضرورية لإجراءات طب الأسنان، حيث تضمن العزل، وسلامة المريض، وكفاءة العمل الأفضل لطبيب الأسنان. ومع ذلك، فإن استخدامها غالبًا ما يقتصر على تحديات مثل صعوبة التطبيق، وقلة الوقت، وقلة التدريب المناسب. هدفت هذه الدراسة إلى تقييم مواقف و معرفة و ممارسات و تحديات استخدام سدادة المطاط أثناء عمليات الترميم و اللب بين أطباء الأسنان في طرابلس، ليبيا. تم إجراء دراسة استقصائية عبر الإنترنت شملت 165 طبيب أسنان باستخدام استبيان مدقق مكون من 26سؤال. تم تحليل البيانات باستخدام اختبارات مربع كاي، مع تحديد الدلالة الإحصائية عند $p<0.05$. أظهرت النتائج أن 67.9٪ من أطباء الأسنان لديهم إمكانية الوصول إلى الحاجز المطاطي، لكن 64.8٪ فقط يستخدمونها. أفاد 61.2٪ بعدم وجود تدريب خلال الدراسات الجامعية، وذكر 42.4٪ أن التدريب غير الكافي هو العائق الرئيسي. تم العثور على ارتباطات كبيرة بين استخدام الحاجز المطاطي والجنس ومكان العمل والتدريب السابق و سنوات الممارسة. على الرغم من أن أطباء الأسنان أعربوا عن مواقف إيجابية تجاه استخدام الحاجز المطاطي، إلا أن العقبات مثل التدريب غير الكافي، والإجراءات الإشعاعية، وقلة الوقت تعيق التطبيق المنتظم. يمكن أن تؤدي برامج التدريب المحسّنة إلى تحسين معدلات القبول.

الكلمات الدالة: أطباء أسنان ليبيون، طب الأسنان اللبية، استبيان دراسة وصفية عبر الإنترنت، الحاجز الطاطي.