

Awareness of Dental Practitioners toward Using Provisional Restoration

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Abstract

The success of prosthodontic treatment requires the prepared tooth/teeth to be protected by a provisional restoration which resembles the definitive restoration. Tooth reduction exposes the tubules of dentin and that requires pulp protection. Provisional restorations protect the pulp from bacterial, chemical and thermal insults. However, some clinicians do not give importance, time or effort to constructing a

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provisional restoration; instead directly go for the cementation of the permanent restoration. The objectives of this dissertation were to assess the number of Private Dental Practitioners (PDPs) who practice and do not practice provisional restoration. In addition, it is to evaluate their knowledge, awareness and practice about temporary restoration in AZ Zawiyah city with the aid of questionnaire. Descriptive statistics and frequency distribution were analyzed using SPSS version 19 and one sample t-test. Completed questionnaire forms were collected, giving a response rate of 65.33%. The results showed that 77.55 % of surveyed dental practitioners practice crowns and bridges in their daily practice. 76.32% of PDPs use the provisional restoration as a part of treatment, while 2.06% of them use it but not always, and 21.05% never use the provisional restoration before cementing the definite restoration. 40% of clinicians prefer to use the indirect technique for constructing the provisional restoration. The outcomes of the study also showed that 70% of PDPs recommended provisional restoration to their patients, and 84% of them tell their patients about the benefits of the restoration. However, only 60.53% of clinicians usually succeed to convince their patients. It was concluded that the Private Dental Practitioners in Az Zawiyah city have sufficient awareness of using provisional restoration. Also, the study concluded that the awareness of the practitioners didn't with the experience years.

Key Words: *Provisional restoration, Awareness, Attitude, Tooth preparation, fixed dental prosthesis*

Introduction

During the process of dental restoration (crowns and bridges) construction, the natural teeth need to be prepared to not enlarge their size and to provide enough space for crown restoration to withstand mastication forces. Therefore, the prepared tooth became very sensitive and needs to be protected from environmental damages until a permanent restoration can be ready with provisional (temporary) restoration.

A provisional restoration can be defined as “A fixed or removable prosthesis designed to enhance esthetics, stabilization and/or function for a limited period of time, after which it is to be replaced by a definitive prosthesis. Such prostheses are used to assist in the determination of the therapeutic effectiveness of a specific treatment plan or the form and function of the planned for definitive prosthesis” [1].

Provisional (temporary) restorations used in fixed prosthodontics are important to the overall success of the treatment [2]. A provisional restoration is considered acceptable for restoring the tooth temporarily; it should cover the prepared part of the tooth to provide adequate pulp protection, better appearance and harmony with the other oral tissues, represent the physiologic contours, and maintain the occlusal. Also, the provisional material should be capable to meet this requirement [3]. Some clinicians do not give adequate time and effort to constructing a temporary as they consider it merely temporary and directly go for the cementation of the final prosthesis [3]. Wassell RW [4] has elaborated further functions of provisional restorations, which helps in diagnosis like assessing phonetic problems and other practical uses such as measuring the amount of tooth reduction. In addition to providing isolation and a temporary filling in the form of a crown during endodontic treatment, it acts as a mould for core construction.

Temporary restorations can be made intra orally termed as direct restoration, indirect restoration using the cast, or can be direct – indirect. The duration between the tooth preparation of teeth and the cementation of the final restoration can vary from a few days to several weeks or even several months for complex cases [4]. There are different materials used to fabricate provisional restorations, which could be categorized as acrylics or resin composites. Sub-classifications depend on polymerization methods (e.g., chemically activated, light-activated dual activated) [5]. Acrylics are materials that have been in use for making provisional restorations since the 1930s. Currently, Acrylic materials are the most popular materials for constructing both single-unit and multiple-units restorations and they are containing powder and liquid. In general, their popularity is owing to several factors including their low cost, aesthetics, and flexibility. The acrylic materials produce acceptable short-term (i.e., three months) provisional however discolouration of restorations over time is the main drawback of these materials. Other drawbacks involve an unpleasant odour, heat generation and shrinkage during the setting process and dirtiness during mixing. The most used three types of acrylics are poly-methyl methacrylates, poly-R' methacrylates and epimines [6].

Statement of problem:

A temporary restoration is recommended use in the cases of fixed prosthesis (crown & bridges) and other types of restorations, which offers isolation to the prepared part of the tooth to provide adequate pulp protection and a better appearance. However, it is seen that the use of this type of restoration has been limited, and in some cases, the practitioners leave the teeth that have been prepared for a long time up to weeks without protection with a temporary restoration.

Objective:

- To evaluate the number of Private Dental Practitioners (PDPs) practicing and not practicing provisional restoration.
- To evaluate their awareness and attitude toward temporary restoration.
- To distinguish the reason practitioners of not always construct temporary

MATERIAL AND METHODS

Participants

The participants of this study consisted of 75 Private Dental practitioners (PDPs) in five different private dental clinics including (Libyan- Tunisian Center, Al Jamal Center, Smile, One clinic, and Al Nwajed) in Az Zawiyah city, Libya. 15 questionnaires were handed out for each clinic was. Out of 75 questionnaires, 56 were returned and seven of them were excluded as they did not meet for not answering some criteria. Therefore, the number of samples in this studied 49 samples.

Questionnaire

A self-structured (English/Arabic) questionnaire was distributed within private dental clinics in Az Zawiyah, Libya in the period between 10th the of January 2019 and the 10th of February 2019.

The researchers explain to the participants the purpose of this study, and how the answers to the questions could affect the result of study. The clinicians were asked to complete the questionnaire immediately after receiving the form to clarify any questions they want. However, some of the dentists requested to do the questionnaire at home due to the busy time they had at clinics.

The survey was entitled "The using of Temporary Restorations", which was divided into two sections.

The First part enquired about the basic information of PDPs. Including the gender of participants, and their qualifications e.g: Bachelors of a dental surgeon (BDS), Masters of a dental surgeon (MDS), or Doctorates of a dental surgeon (DDS). Also, the years of experience working as a dentist in this field.

The second part included questions to appreciate their attitude, knowledge and practice regarding temporary restoration.

Data Analysis

Completed questionnaires were coded and data tabulated prior to analysis. Frequencies and percentages were used to examine the distribution of responses for each variable. Descriptive statistical analysis was carried out using the IMB Statistical Package for Social Sciences (SPSS) Statistic version 19 and one sample T-test. The selected level of significance was accepted at $P < 0.05$. The missing answers were treated as missing values.

RESULT

The data provided by returned questionnaires were collected and analyzed: All the 49 questionnaires

First part: Basic information about private dental practitioners (PDPs).

Figure 1 shows the percentage of practitioners' gender who are engaged in this study. The total of samples was 49. A number of 21 samples were male with a percentage of 42.9% and 28 samples were female with a percentage of 57.1%.

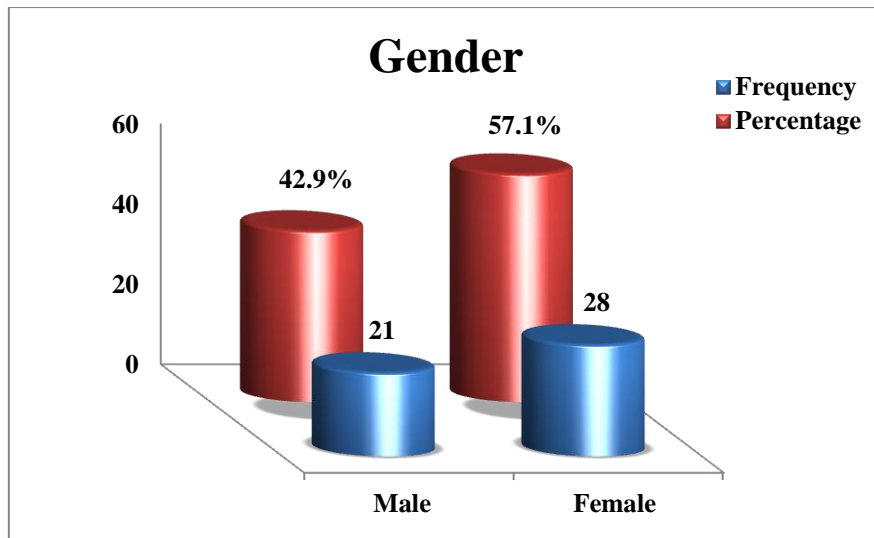


Fig 1: Gender of PDPs

Figure 2, and table 2 indicate the qualification of Private Dental Practitioners (PDPs). The number 44 samples that represent the majority of the participants in this study were qualified with a bachelor of dental surgery (BDS) with a percentage of 91%, while two samples were MDS and also two cases were DDS and one case did not answer the question.

Table 2: Qualification of Private Dental Practitioners (PDPs)

Qualification	BDS		MDS		DDS		Missing		Total
	Male	Female	Male	Female	Male	Female	Male	Female	
Frequency	6	28	2	-	2	-	1	-	49
	44		2		2		1		
Percentage	89.8%		4.1%		4.1%		2.0%		100

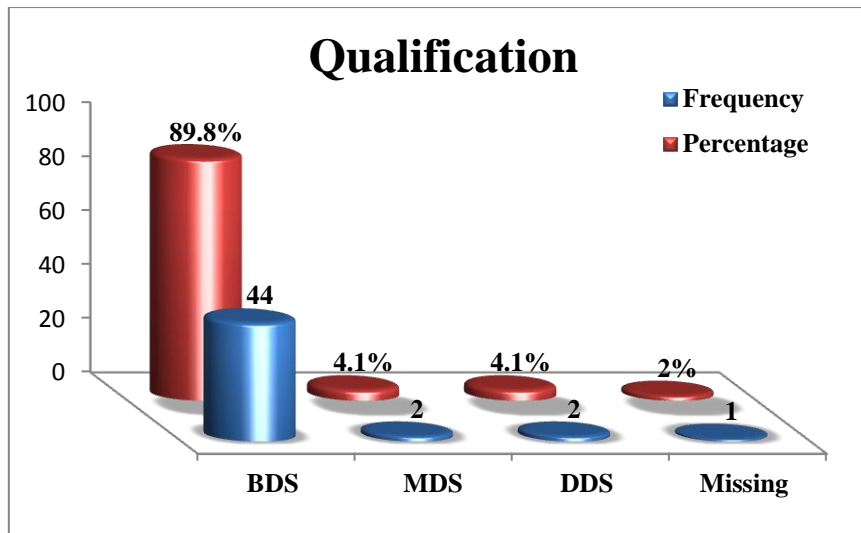


Fig 2: Qualification of Private Dental Practitioners (PDPs).

Most of the practitioners (30 samples) have experienced years between 1-3 & 3-5 years together with 60.12% and a case of more than 19 years (2.4%).

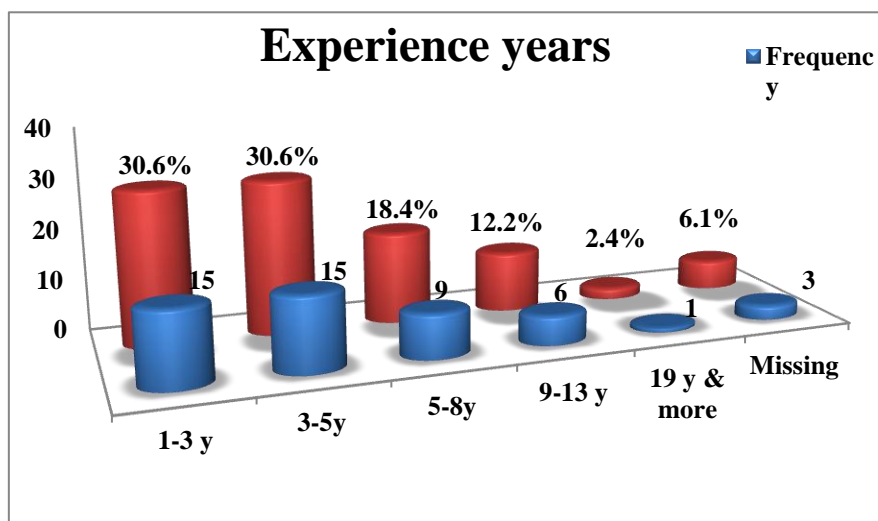


Fig 3: Experience years of (PDPs)

At the end of the basic information, a question asked the practitioners whether they practice cases of crown & bridges or not, out of 49 samples n=38 (77.55%) answered with yes they practicing crown & bridges cases, and (22.45%) n=11 of samples answered with no (figure 4).

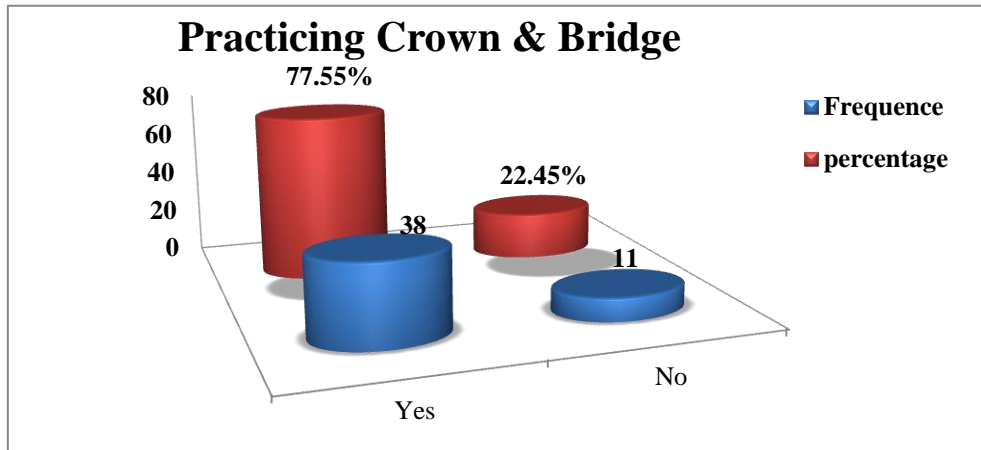


Fig4: Percentage of (PDPs) practicing Crown & Bridges

Second Part: Attitude and practice of PDPs practicing of T.R.

On the question of whether you use temporary restoration as part of treatment, 29 practitioners of clinicians answered yes with a significant value of 0.000, which is less than the p-value of 0.05, while one practitioner (%2.63) answered yes but not always, and eight practitioners (%21.05) said no, they don't use it as part of treatment plane (figure 5).

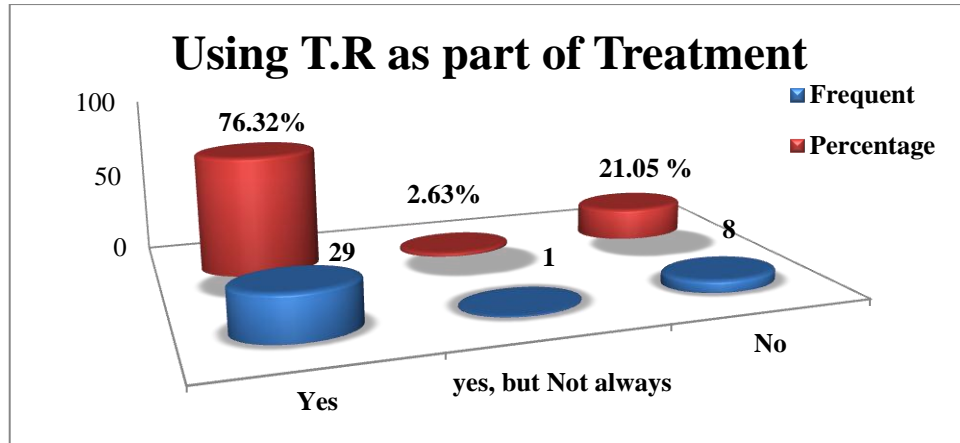


Fig 5: (PDPs) practicing T.R as Part of Treatment

Figure 6 illustrated the answer of the question of how many cases did you apply during your experience years. (36.67%) n=11 samples build between 1-10 cases, (16.67%) n= 2 samples have done 40 cases and more, (3.33%) n= 1 have given between 30- 40 cases, while (43.33%) n=13 of samples didn't answer the question and it considered as missing data.

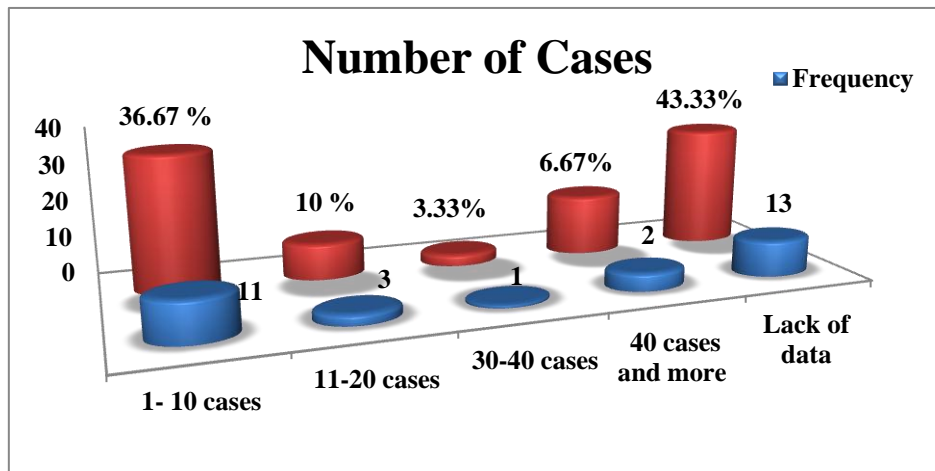


Fig6: number of cases applied by (PDPs)

Figure 7 illustrates the percentage of teeth that are regularly replaced by PDPs with interim restorations in Az Zawiyah City. Crowns were applied in 50% of the cases, while bridges were used in 46.67% of the cases. In the case of the applied single tooth (crown), the incisors were the most replaced teeth with a percentage of 40%, followed by molars, canines, and premolars with 23.33%, 16.67%, and 14.7%, respectively.

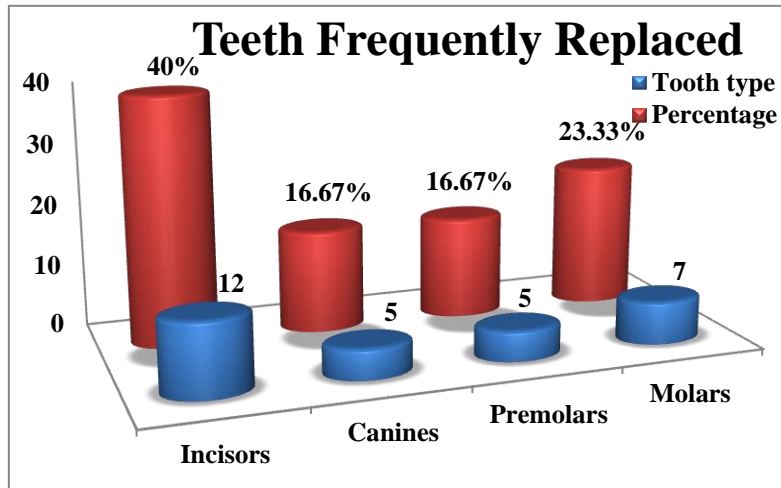


Fig 7: Frequently replaced teeth

When the PDP asked about the technique used to fabricate temporary restoration as it showed in fig (8), (30%) n= nine of surveyed practitioners used the direct technique and 12 (40%) indirect technique, which represents the most used technique. Whereas seven (23.33%) of them used the indirect-direct technique.

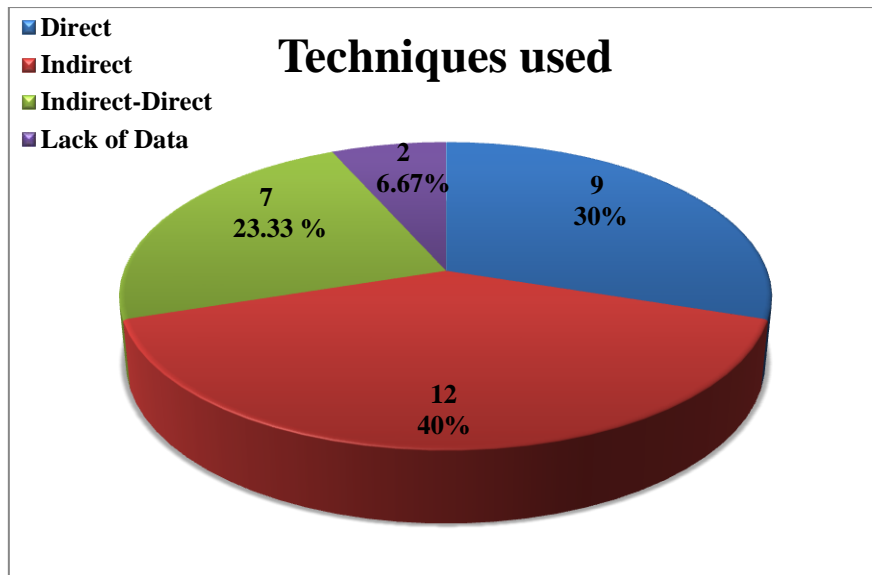


Fig 8: Technique used to fabricate T.R

On the question of the material that was used when the direct technique was applied, out of nine samples we received just two answers said acrylic material and alginate material.

Figure (9) exhibits the number and percentage of surveyed practitioners who advise their patients to use temporary (provisional) restoration, the results showed that out of all 30 samples who are practice temporary restoration 21 samples with a percentage of (%70) advice their patients to use it. However, (%26.67) eight practitioners did not advise their patients for using it.

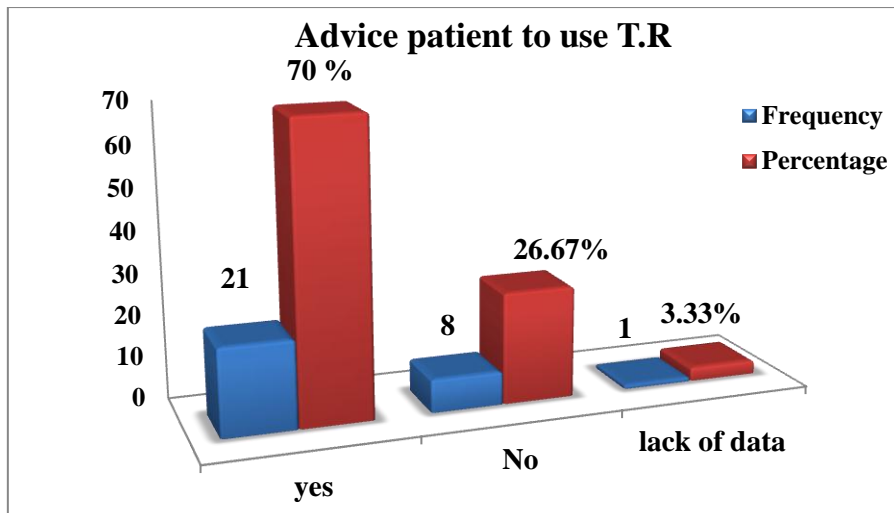


Fig 9: Practitioners who Advice the Patient to use Temporary Restoration

Figure 10 shows the answer of the practitioners on the question of do you tell the patient about the benefits of the (T.R.). Out of 38 practitioners who are practicing crowns and bridges treatment (32) samples with the percentage of 84.21% answered yes, while (5) with presented in 13.16 % of them answered no, and only one 2.63% didn't give an answer.

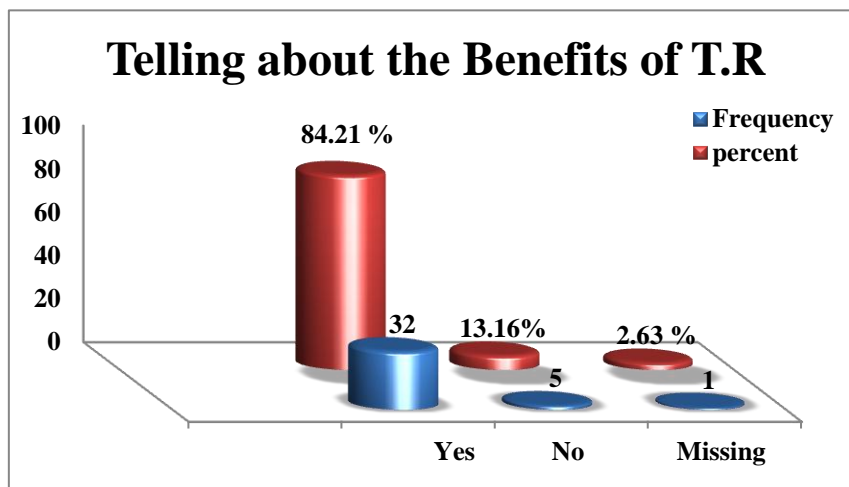


Fig 10: percent of PDPs tell about T.R's benefit

When clinicians were asked whether they could persuade their patients to use T.R. or not, the responses of the questioned practitioners suggest that 23 (60.53%) practitioners could convince their patients, whereas 13 (34.21%) clinicians could not (Figure 11).

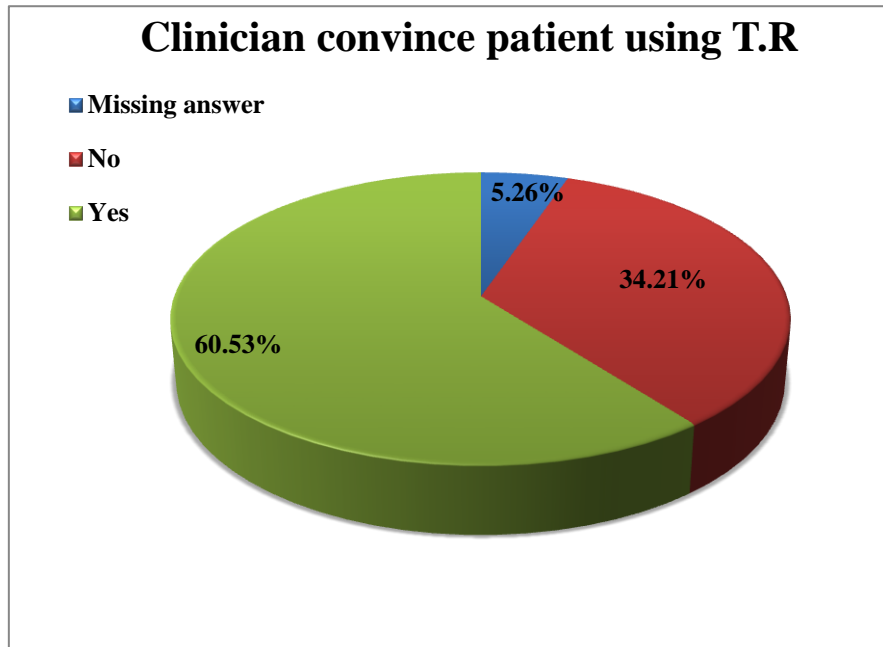


Fig 11: clinicians who convince the patients

The reasons used by dental clinicians to persuade the patient to use the temporary restoration as shown in fig 12. The most convincing used reason was by 15 practitioners 39.47%, followed by the reason of cosmetics and aesthetics in 11(28.95 %) samples of the questionnaire population. However, 11 people declined to answer this question 28, where is not a small percentage.

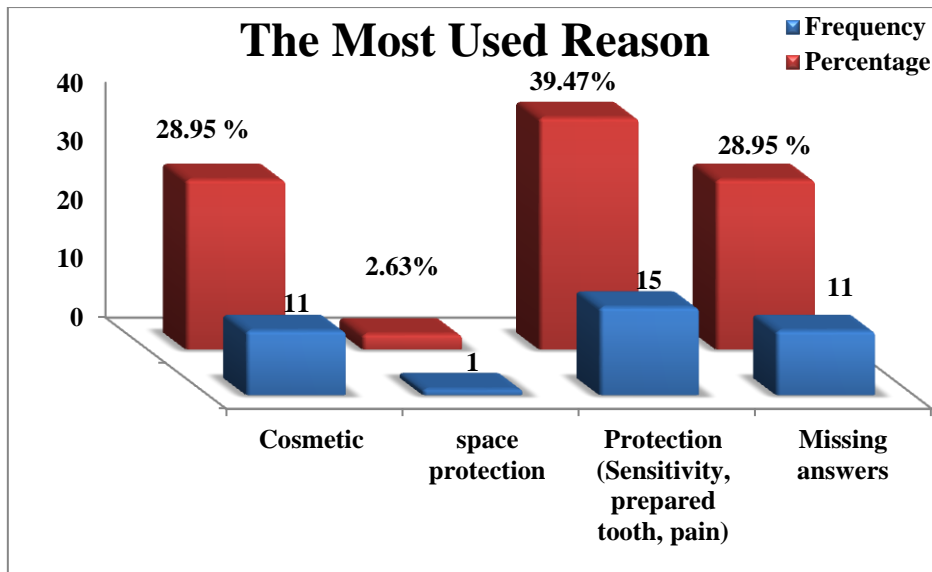


Fig12: The most used reason to convince the patient

When the clinicians were asked if they faced problems convincing patients to get temporary restoration, 26 (53.1%) the majority of them answered as presented in figure 13.

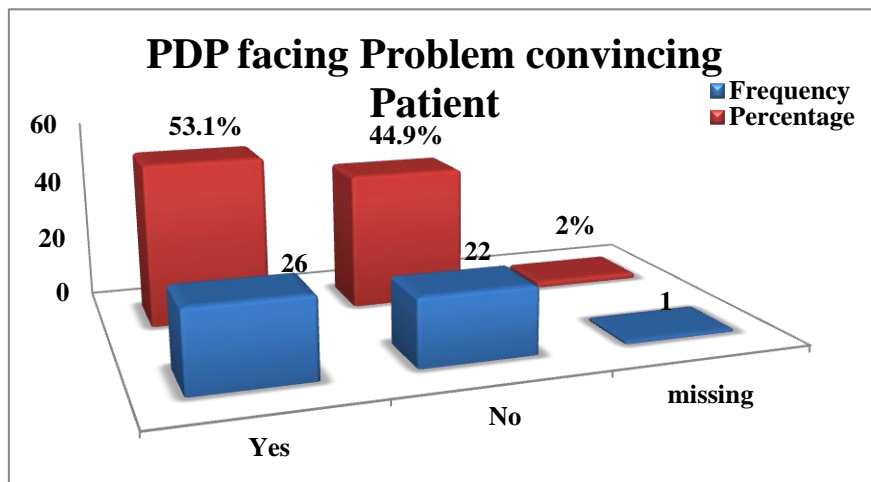


Fig 13: The percentage of PDP facing problem-convincing patients

Moreover, when they asked about the most difficulties faced in convincing the patients for using provisional restoration as a part of treatment, their answers presented in fig 14, out of 26 practitioners who are faced problems convincing patients 13 samples (50%) of the PDPs said that cost was a major hindrance for them in convincing patients using these restorations. While 11 (42.3%) samples of PDPs did not answer the question, the answers considered as missing data.

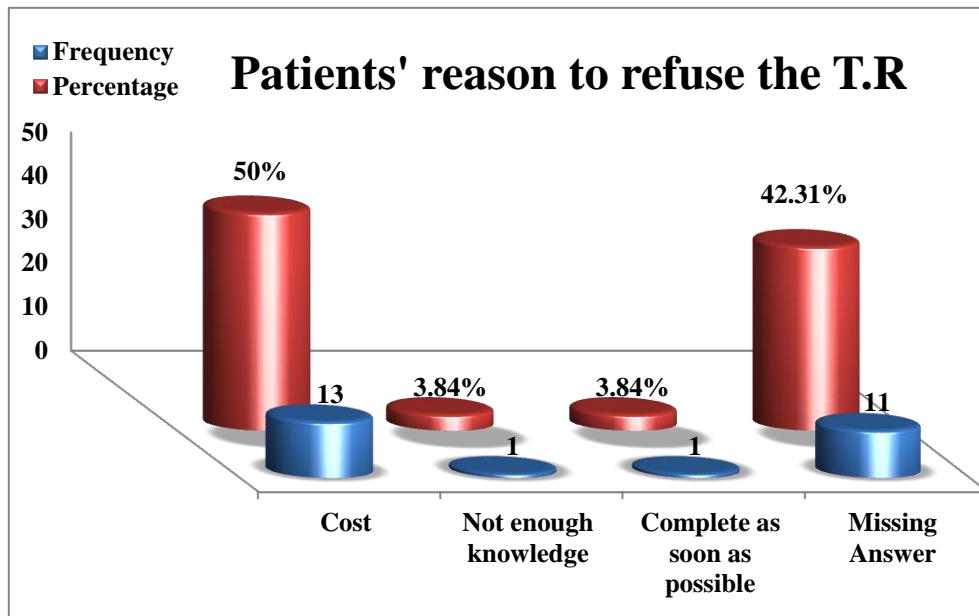


Fig 14: The Percentage of Patient's Reasons for Refuse Treatment

Discussion

This study was carried out to assist the attitudes, and awareness of dental practitioners toward the provisional (interim) restoration during the rehabilitation of patients' occlusion using crowns and bridges treatment in private dental clinics in Az Zawiyah City, Libya in their daily practice based on answering questioners distributed among them.

A questionnaire study requires a good response rate to be acceptable. The result of this study showed that the general response rate was 65.33%, which is considered adequate for limiting non-response bias for questionnaire-based studies.

In addition, in order to verify the reliability of the questionnaire of the current study, the Alpha Cronbach value was used. The value was calculated and the result was 72%, which is, consider an acceptable value.

The number of samples in this study was 49, and the surveyed practitioners were 21 (42.9%) male and 28 (57.1%) female.

Out of 21 male practitioners, 16 were qualified with BDS, 2 qualified with MDS, and 2 practitioners were DDS. However, what it noticed in this study all female practitioners that enrolled in this questionnaire were qualified with BDS. Moreover, the reason behind it could be those who are with higher degrees prefer academic work to clinical practice.

The purpose of asking the question of the experience years was to investigate if is there a relationship between the experience years and practicing or not practicing the temporary restoration. However, 15 (30.6%) practitioners were with experience years of (1-3), and 15 (30.6%) practitioners were with experience years of (3-5) compared to 6 (12.2%) practitioners with experience years of (9-13). This means that there is no significant relation between practicing temporary restoration & the experience years with a p-value (0.004).

In the current study, the percentage of practitioners who are practicing crown and bridge restorations was (77.55%) n= 38, while (22.45%) n= 11 do not practice crown and bridge cases. When the finding of this study compared with the surveyed study indicated in India 2018 [7], the percentage of practitioners who were practicing crown and bridge

cases in their daily practice was 69%, which is lower than the results of the current study. Whereas 21% of them rarely give this type of restoration and 10% of them never provided crowns and bridges for their patients, which is also lower than the percentage of the present study, and it is considered better than the percentage of the practitioners who do not practice crowns and bridges.

Regarding the percentage of the population who were practicing crown and bridge treatment whether using temporary restoration as part of treatment after tooth preparation or not, The result of this study indicated that 76.32 % of all population of the present study were using provisional restoration with p-value (0.000), which is considered as significant. However, (2.63%) n= 1 of them use it but not always and 21.05 % don't use temporary restorations. This result was higher than the previous surveyed study done in Pakistan in 2016 [8], in which 70% of practitioners placed temporary crowns but only in the case of anterior and vital teeth [8]. In a comparison with the percentage of practitioners who claimed that they don't use provisional restorations in other previously surveyed studies that have been done in India and Saudi Arabia [9] [10], the results of this survey study were lower than the results of both studies. Hence (36.05%) of Saudi practitioners never made provisional crowns and bridges restoration [10], and the study suggested further study to know the reason for not always making T.R., and (66 %) of Indian practitioners never used the temporary restoration after a procedure of tooth preparation [9].

On the question of the number of cases was recording during practitioners practicing years, (36.67 %) n= 11 of samples practiced between 1-10 cases during their practicing years. Unfortunately, out of all 30 samples who were using the temporary restoration in their daily

practice 13 (43.33%) practitioners skipped the question without answering.

In addition, the present study showed the problem, which here were not records, belongs to each practitioner recording his/her cases and the given treatment for each patient.

The most frequently replaced teeth were incisors with percentage of 40% followed with molars with percentage of 23.33% which is in coordinate with the study of Pakistani practitioners [8] reported that the most used provisional crowns were in vital anterior teeth that indication of the patient concern mostly on the cosmetic.

In this study, 46.67 % of clinicians stated that they applied anterior FPD provisional cases, and 50% of them they mainly used crown provisional cases.

According to the current study, the most used technique to build the restoration was the indirect technique with a percentage of 40%, however, the practitioners who answered the questionnaire with the direct technique they did not have the enough awareness about the used material. In, the majority of them skipped the question of material without answering, or they even gave inappropriate answers e.g. zirconia (it cannot be used as provisional material).

On the other hand, 68 % of the practitioners have the awareness to advise their patients to use the restorations and 84.21% of them tell their patients about the obtained benefits if they used this type of restoration. However, just 23% of them succeed to convince the patients to use it. Since the concern of the patients focused mainly on aesthetics, the second most reason used by practitioners to convince their patients were cosmetics reason with a percentage of 28.95% for aesthetics and the most

used reason was providing protection from the pain of pulp and gingiva hypersensitivity with a percentage of 39.47%.

The most common hindrance faced by PDPs to convince patients to dental provisional replacement treatment was the high cost with per cent of 50%. Though, during distributing the questionnaire to the clinician, the researchers emphasized they give appropriate and precise answers because their answers can affect the data negatively, again 42.31% of practitioners did not answer the question, and this percentage can't be neglected. What can be noticed from this study is that there was no awareness among the practitioners toward the importance of the questionnaire-based study, and they did not spend enough time answering some questions.

CONCLUSION

This survey study focused on the use of Provisional Restoration by dental practitioners in five private dental clinics in Zawia city, Libya. This study was the first study in Libya aimed to assess the awareness of using provisional restoration among dental practitioners (DP).

Within the limitations of the study, the present study concluded that the surveyed practitioners have sufficient awareness of using provisional restoration. However, its use in clinics is not compulsory as part of receiving treatment, and the patients have to pay the additional price to get this restoration, making some patients prefer suffering from the pain to not using it.

In addition, the study concluded that the awareness of the practitioners correlated weakly with the experience years. In other words, there is no relation between the experience years of dental practitioners and their use of temporary restorations.

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