KNOWLEDGE, ATTITUDE, PRACTICE OF RESIN LUTING CEMENT FOR FIBRE POST AND POST ENDODONTIC RESTORATION AMONG DENTAL STUDENTS

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ABSTRACT:

INTRODUCTION: Resin cements are mainly used in restorative dentistry because they have good mechanical and aesthetic properties for luting indirect restorations. Large amounts increase the hardness of the cement and also the film thickness and it reduces the mechanical strength. **AIM:** To determine the knowledge, attitude, practise of resin luting cement for fibre post and post endodontic restoration among the dental students. **MATERIALS AND METHODOLOGY:** A well-structured 15 questions were prepared covering socio demographic information, knowledge, attitude, perception on resin luting cements was framed and administered to the participants through an online google form. Survey was conducted among 100 dental students. The collected data was subjected to SPSS. Descriptive statistics was drawn with respective percentages to have a comparative overview. **RESULTS:** Among 100 dental students 53% of the students were aware about the resin luting cement for endodontic restoration and 47% of the students were not aware about the endodontic restoration. Among the study population more male were aware about the resin luting cement and more females were not aware about the resin luting cement. The Pearson value is 0.00 which is statistically significant. **CONCLUSION:** Within the limitations of the survey we conclude more population have less knowledge about the resin luting cement, so knowledge should be created among the dental students.

KEYWORDS: Innovative technology, Eco friendly, knowledge, resin luting cement, endodontic restoration, awareness.

INTRODUCTION:

Resin cements are mainly used in restorative dentistry because of their good mechanical and aesthetic properties in restorations. (1) fibre reinforced composite posts have been used oftenly for the restoration of endodontic treatment. It reduced fracture resistance in vitro, Bonding property of FRC post, luting agents, and root canal dentin demonstrated different results. Bond strengths

between FRC posts and resin cements can be determined by using various pretreatment procedures, hence the bonding strength to root canal dentin is difficult. (2) . coronal leakage as a common factor associated with endodontically treated teeth requiring non-surgical treatment. luted fiber-reinforced composite (FRC) posts were introduced in 1997 and have been increasingly used for the restoration of endodontically treated teeth.(3) . Resin cements are polymers which have been added as well as fluoride which are set by polymerization of the resin monomers. Polymer degradation due to hydrolysis and a lack of bonding to enamel and dentin make these cements , and it leads to leakage at early failure of the restoration.(4) . Conventional resin-based cements Methyl methacrylate-based on conventional resin luting cements which was found in the 1950s and it is chemically comparable to direct acrylic filling materials. And it did not adhere to tooth structure, considerable polymerization shrinkage, had a high coefficient of thermal expansion and was absorbed in water which has a microleakage at the tooth-resin interface.(5) .

Nowadays resin cements play a good role in today's dental product market because it has good versatility, high compressive and tensile strengths, low solubility and very favourable aesthetic qualities. And the difficulty faced by it is excess removal, technique sensitivity, difficulty of removal of the restoration and their high costs(6). There are many types of conventional cements. Mostly it consists of a powder and liquid that create a chemical reaction when mixed together, causing the cement to set. Resin-based cements used for luting in intraradicular dentin. A combination of the etch-and-rinse adhesive system and regular resin cement is the approach most often used in dental practice(7) .

Ceramic crowns, inlays and onlays made of glassy matrix ceramics which increase flexural strength and it is etched with hydrofluoric acid, silanized and cemented with a resin cement. removal is usually performed after 2 s of spot curing and restorations are polymerized after initial clean-up. (8). Our team has extensive knowledge and research experience that has translate into high quality publications(9–18),(19–22),(23–27) (28) .The aim of this study is to determine the knowledge, attitude, practise of resin luting cement for fibre post and post endodontic restoration among the dental students.

MATERIALS AND METHODOLOGY:

A cross sectional study was conducted among undergraduate dental students in a dental institution. This was done in the form of a questionnaire that was circulated online. The dental students were of the age group 18 to 25 years. The study protocol was approved by the institutional review board and the questionnaire was validated. The sample size of this study was 100. The questionnaire consisted of 15 questions that mainly focused on knowledge, awareness and practice of resin luting cements among dental students. The questionnaire was distributed among the students through an online survey website called google forms. The data was collected, compiled and was arranged in a systematic manner and was analysed according to SPSS software.The Pearson Chi Square test was also done with statistical significance of $p<0.05$. The independent variable of the study was gender. The results were then represented in the form of pie charts and bar charts.

Inclusion criteria: The participants should be dental students.

Exclusion criteria:
Students who were not available to take the survey.
Students who were not willing to participate.
Dentists who had completed the period of study.

Study setting: It is a prospective observational study and the pros are economical, easy to create, gather larger, quick interpretation, wide reach and cons is response, survey fatigue, homogeneous population. The study was approved by the scientific review board of the institution.

Study method: A simple random sampling method was done. Measures taken for minimising the sampling is based on the internal and external validity, minimizing error in questions and avoiding the leading questions. Output variables are represented using pie charts for each output. Each output variable was collected as ordinal data and the collected data were represented as pie charts and bar graph. A statistical test was done using SPSS software. Statistical test used descriptive analysis and frequency percentage.

RESULTS:
Table 1: Representing responses of the study population to the questionnaire.

S.NO	QUESTIONS	CHOICES	RESPONSES
1.	Gender	Male Female	47% 53%
2.	Are you aware about resin luting cement for endodontic restoration?	Yes No	53% 47%
3.	Is resin luting cement used for?	Direct filling Indirect filling All the above None of the above	12% 47% 18% 23%
4.	Do you think whether the luting cement is useful in crown cementation?	Yes No	44% 56%
5.	Do you think whether	Yes	70%

	it has a good bonding strength?	No	30%
6.	Does resin luting cement prevent the tooth from the bacterial penetration?	Yes No	60% 40%
7.	Do you think whether resin luting cement has good biocompatibility?	Yes No	62% 38%
8.	Do you know the ideal film thickness for the luting cement?	25 micrometers 26 micrometers others	49% 40% 11%
9.	Does it works for long time uses/ purposes?	Yes No	65% 35%

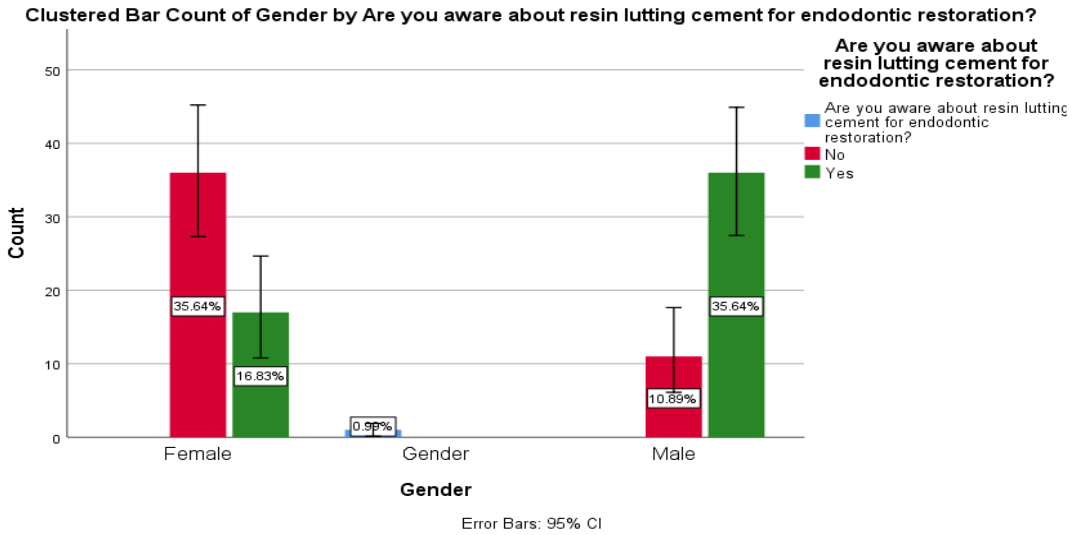

Fig -1 shows the association between gender and awareness of resin luting cement among endodontic restoration. In that 36% of the male students were more aware about the resin luting cement than the female. In that X-axis represents the gender and Y- axis represents the awareness about the resin luting cement in endodontics treatment, in this red denote percent who were not aware about the resin luting endodontic restoration and blue colour denote the percent of people who were are aware about it. Pearson chi-square test shows the p value is 0.00 (p value < 0.05). Hence association was statistically significant.

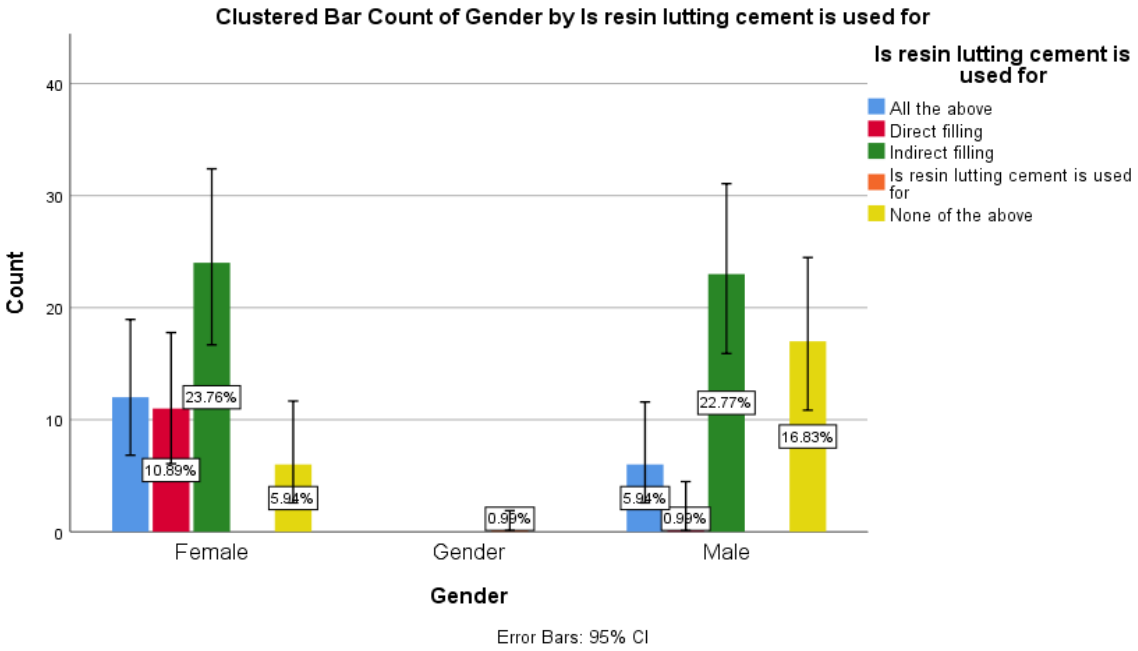

Fig -2 Association between gender and uses of resin luting cement. In that 36% of the male students were more aware about the resin luting cement than the female. The percentage of dental students, in that 53% were female students(red) and 47% of the students were male students(blue). Pearson chi-square test shows the p value is 0.00 (p value < 0.05). Hence the association was statistically significant.

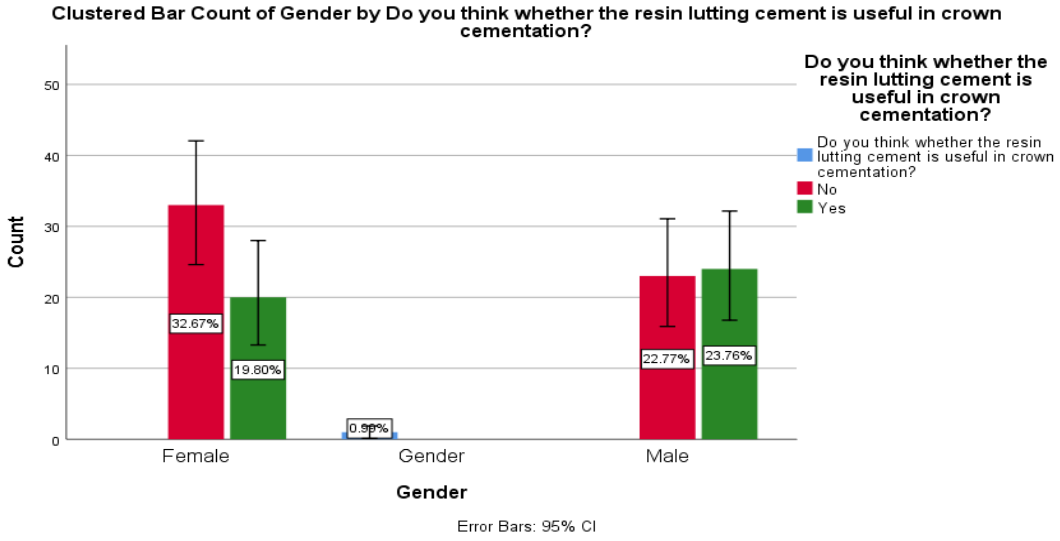

Fig -3 Association between gender and resin crown cementation used of resin luting cement. In this more 32% of the females said resin luting cement were not useful in crown cementation.In Pearson chi-square test shows the p value is 0.00 (p value < 0.05). The association was statistically significant.

DISCUSSION:

From the above survey among 100 dental students majority female students were more aware about the resin luting cement in dentistry than male students. Majority of the students used resin luting cement for indirect filling rather than direct filling procedure. Many students said that resin luting cement is not useful in crown cementation and few said that it is used for crown cementation. 66% of the students were aware that resin luting cement can prevent bacterial penetration. 62% of the participants believe that resin luting cement had good biocompatibility. 56 % consider that the resin luting cement does not seal the gap between tooth and restoration.

From the article the author said that Resin-modified cement (RM), developed in the 1980s, is a hybrid material derived from adding polymerizable resins to conventional cement. Luting cement used with tooth preparation and used to attach indirect restorations(29). There are many types of conventional cements. Mostly it consists of a powder and liquid that create a chemical reaction when mixed together, causing the cement to set. Resin-based cements used for luting in intraradicular dentin(30). In the current article Fig 13 represents the percentage of uses of precementation surface , in that 12 % used for increased surface energy, 21% used to provide greater area for resin penetration, 41% used to improve mechanical property and 26% all the above. In the previous article the author said that luting agents have been introduced clinically with better performance than existing materials(31). From the current study Fig 11- shows the percentage of resin helps to reduce the stress and micro crack formation during the ceramic restoration. In that 49% said yes and 51% said no , and the previous article said that No statistically significant difference was found between the microleakage of teeth using the resin luting cement.(32)

From the current study we conclude that the dental students were aware about the resin luting cement in endodontics. The limitation of the study is that it can be conducted among the larger population, and they can do in vivo study in these resin luting cement. The future scope of this study is it can be used as a good tool in dentistry for tooth restoration. Large sample size and expansion of geographic area can yield better, accurate results for the study.

CONCLUSION: From this survey we conclude that dental students were aware about the resin luting cement. Knowledge about the restoration was more among the dental students and more knowledge and practise should be created among more dental practitioners. And it is used as a good material for teeth restoration. From this people can have good knowledge on oral health and they have a good aesthetic nature.

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CONFLICT OF INTEREST: NIL

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Ethical Clearance:- Not required

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