



Knowledge, Awareness and Attitude of Precision Attachments among Dental Practitioners: A Questionnaire Based Study

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INTRODUCTION: Precision attachments are an important aspect of prosthetic dentistry by providing retention to the prosthesis with aesthetics compared to conventional retainers that are visible clinically.
AIM: To access the implementation of this practical concept by dental practitioners in their routine practice, a questionnaire based survey was conducted on dental practitioners and lab technicians.
MATERIALS AND METHOD: A questionnaire containing 15 questions was distributed among dentists and lab technicians via Google forms and the responses were analyzed to evaluate knowledge, awareness and towards the concept of precision attachments. Data analysed was based on qualification (i.e. BDS, MDS in Prosthodontics, MDS Others, OTHERS i.e., DCI recognized diploma and fellowship courses post-BDS) and years of experience (0-10, 11-20 & >20 years) for the dentist-based survey and based on years of experience (0-10, 11-20 & >20 years) for the lab technician-based survey. Data was subjected to Chi-square test using Statistical Package of Social Sciences (SPSS) Software.
RESULTS: Out of 336 participants, 45% were BDS, 30% were MDS in Prosthodontics, 23% were MDS in other fields and 2% were from others category. It was reported that 'MDS in Prosthodontics' with 11-20 years of experience seem to have the maximum confidence to handle cases of precision attachments. 'BDS' with 0-10 years of experience group have the least confidence to handle cases of precision attachment and the results was found to be statistically significant ($p=0.02$) indicating that while dentists are aware of this treatment modality but its implementation is limited to the prosthodontists. Responses of lab technicians also highlighted lack of knowledge and skill of dental practitioners to handle cases of precision attachment optimally ($p=0.02$).
CONCLUSION: Among dental practitioners, very less number have general knowledge and skills of this treatment modality. Therefore, its usage in current clinical scenario is still a challenging one.

KEYWORDS: Precision Attachments, Retention, Aesthetics

INTRODUCTION

Precision attachment is an important concept in the field of Prosthodontics while delivering a removable or a fixed partial prosthesis. Use of precision attachments dates back to Egyptian times around 4th to 5th century BC.¹ In early years of 20th century, Dr. Herman ES Chayes in 1906, first introduced T-shape attachment.² Precision attachments are classified according to method of fabricating (prefabricated or custom/laboratory fabricated), based on location (intracoronal, extracoronal, intraradicular stud type), based on functional movement (rigid, resilient).³ Benefits of using precision attachments include extra retention to prosthesis, proper distribution of stress, cross-arch stabilization and aesthetics.⁴

They are considered to be a versatile method of retention and are nowadays used in many of cases such as with removable and fixed dental prosthesis.^{5,6}

overdentures,⁷ implant supported prosthesis⁸ and maxillofacial prosthesis.⁹

Use of direct retainers in prosthesis might not be aesthetically acceptable to some patients. Application of precision attachments overcomes this drawback. Precision attachments also helps to provide a good vertical support to prosthesis and provides a stimulatory effect to underlying soft tissues by intermittent vertical massage.⁴ Clinical usage of precision attachments is a very technique sensitive procedure which requires thorough space analysis, location of abutment teeth, establish path of insertion.¹⁰ A thorough planning of the case is required for a successful delivery of prosthesis with precision attachments. Slight error in one of the above mentioned mechanical and biological could lead to ill fitted prosthesis. Sensitivity of this procedure leads to



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ignorance of implementing the concept precision attachments in clinical practice.

Therefore, the main objective of this study to access the knowledge, awareness and attitude of dentists towards implementation of precision attachments and to explore the coorelation of precision attachment usage with the qualification and experience in the field. Four groups were divided according to qualification (BDS, MDS in Prosthodontics, MDS in other speciality and BDS with DCI recognized diploma or fellowship courses) and into three groups based on experience (0-10 years, 11-20 years and >20 years).

Also, knowledge, awareness and attitude of Lab Technicians about precision attachment was also assessed and were also divided into three groups based on experience i.e. 0-10, 11-20 & >20 years.

MATERIALS AND METHOD

A questionnaire based survey was performed on dental practitioners and lab technicians to evaluate the awareness, knowledge and awareness towards precision attachments. Questionnaire with 15 questions was prepared for dental professionals, 10 questions for Lab Technicians.

Awareness of dental practitioners, specialist dentists including prosthodontists was evaluated based on answers obtained in seven awareness oriented questions. Knowledge of prosthodontists and other dental practitioners was evaluated based on the response obtained in four question numbers. Attitude response of prosthodontists and other dental practitioners was also assessed based on the question related to confidence to independently handle precision attachment cases. This questionnaire-based survey was conducted with the help of Google forms after clearence from the Institutional Ethics Committee. Total sample size was 336 for the dentist-based survey and 34 for lab technician based survey. Data was collected as per responses obtained via google forms, entered into Microsoft Excel spreadsheet and was subjected to Chi- square test using Statistical Package of Social Sciences (SPSS) Software. The data analysed, was based on qualification (i.e. BDS, MDS in Prosthodontics, MDS Others, OTHERS i.e., DCI recognized diploma and fellowship courses post-BDS) and years of experience (0-10, 11-20 & >20 years) for the dentist-based survey and based on years of experience (0-10, 11-20 & >20 years) for the lab technician-based survey.

RESULTS

Out of 336 participants, 45% were BDS, 30% were MDS in Prosthodontics, 23% were MDS in other fields and 2% were from Others category i.e., DCI recognized diploma and fellowship courses post-BDS. Due to unequal representation of 'Others' group, it was excluded to avoid sampling bias (table 1).

GROUPS	NUMBER (336)	0-10 Years	11-20 Years	>20 Years
BDS	45% (151)	70% (106)	12% (18)	18% (27)
MDS-P	30% (102)	67% (68)	25% (26)	8% (8)
MDS-O	23% (77)	55.8% (43)	16.8% (13)	27.2% (21)
BDS-O	2% (6)			

Table 1. Distribution of Study subjects.
MDS-P: MDS Prosthodontics, MDS-O: MDS in Other Specialities; BDS-O: BDS along with any other diploma

Maximum positive responses for having used precision attachments were elicited from 'MDS in Prosthodontics' group in >20 years of experience group (table 2). They primarily implemented precision attachments in Removable partial denture (60.1%) > Overdentures (24.1%) > fixed dental prosthesis (14.8%) > Maxillofacial Prosthesis cases (1%). Least positive responses were elicited from 'BDS' group in 0-10 years of experience group and the results was found to be statistically significant ($p=0.02$). This limited use was attributed to lack of knowledge and skill (55.1%) > Never felt the need (20.2%) > Cost of attachments (12.3%) > Inadequate lab support (9.7%) > tedious follow up and maintenance (2.7%).

	0-10 YEARS	11-20 YEARS	>20 YEARS	p- value
MDS-P	50%	84.6%	100%	0.02
BDS	10.3%	55.5%	59.2%	
MDS-O	23.2%	46.1%	57.14%	

Table 2. Responses to the questions: Have you used precision attachments so far?. MDS-P: MDS Prosthodontics, MDS-O: MDS in Other Specialities.

Awareness of dental practitioners regarding precision attachments was maximum among Prosthodontists having 11-20 years of experience (Table 3). As earlier mentioned, knowledge of dental practitioners was evaluated based on answers obtained in four knowledge oriented question. It was found that knowledge was maximum in 'MDS in Prosthodontics' with 0-10 years of experience and least in 'MDS others' in > 20 years of experience group (Table 4).

	0-10 YEARS	11-20 YEARS	>20 YEARS	p- value
MDS-P	72.5%	87.5%	80%	NS
BDS	41.4%	23.8%	20.6%	
MDS-O	28.5%	15.5%	19%	

Table 3. Awareness towards precision attachments among study subjects. MDS-P: MDS Prosthodontics, MDS-O: MDS in Other Specialities. NS: Not Significant

Attitude response of prosthodontists and other dental practitioners was evaluated based the confidence to independently handle precision attachment cases. 'MDS in Prosthodontics' with 11-20 years of experience seem to have the maximum confidence to handle cases of precision attachments. 'BDS' with 0-10 years of experience group have the least confidence to handle cases of precision attachment (table 5).

	0-10 YEARS	11-20 YEARS	>20 YEARS	p- value
MDS-P	43.8%	37.1%	37%	NS
BDS	20.4%	28.4%	15.4%	
MDS-O	17.8%	10.2%	11%	

Table 4. Knowledge towards precision attachments among study subjects. MDS-P: MDS Prosthodontics, MDS-O: MDS in Other Specialities; NS: Not Significant

Out of 34 responses of lab technicians, 50% lab technicians had 0-10 years of experience, 38.2% had 11-20 years of experience & 11.7% had >20 years of experience (Table 6). The results showed that less than five precision attachments cases are done per month by lab technicians in all the groups of experience (Table 7). This shows a general lack of use of precision attachments by dental practitioners. Lack of knowledge and skill among practitioners is the most

common cause for this lack of usage of precision attachments.

	0-10 YEARS	11-20 YEARS	>20 YEARS	p- value
MDS-P	45%	82.7%	77%	NS
BDS	8%	21.2%	21%	
MDS-O	11%	10%	31%	

Table 5. Attitude towards precision attachments among study subjects. MDS-P: MDS Prosthodontics, MDS-O: MDS in Other Specialities. NS: Not Significant

DISCUSSION

This survey was evaluated to access the clinical mindset of dental professionals towards precision attachments. The confidence of independent handling such cases, theoretical knowledge of this concept, according to qualification and experience were also analyzed.

Lab Technicians		p-value
0-10 YEARS	50%	NS
11-20 YEARS	38.2%	
>20 YEARS	11%	

Table 6. Attitude towards precision attachments among study subjects. MDS-P: MDS Prosthodontics, MDS-O: MDS in Other Specialities; NS: Not Significant

Group possessing only BDS degree with 0-10 years of experience did less cases of precision attachment among all the groups. This can be due to less exposure of precision attachment cases in BDS curriculum, thus rendering them less confidence in handling such cases. Maximum cases were performed by the prosthodontists having more than 20 years of experience.

			p- value
0-10 YEARS	11-20 YEARS	>20 YEARS	0.02
94.1%	76.9%	75%	
<5 CASES	<5 CASES	<5 CASES	

Table 7. No. of Precision Attachment cases per month by Lab Technicians

Awareness of precision attachments in 'MDS Others' group was less than that of 'MDS Prosthodontics group'. MDS Others group does use precision attachments in their cases and the number of these cases were increased along with increase in the years of experience. Easy availability of dental education programmes and workshops nowadays enable practitioners from other specialities to use precision attachments in their routine practice.

Confidence of independently handling the precision attachment cases were seen in dentists possessing MDS in Prosthodontics but among these, Prosthodontists having 11 – 20 years were more confident. This could be correlated with abundant exposure to such clinical cases in their post-graduation degree. However, the clinical know how and confidence develops with experience and hence the middle-aged prosthodontists have better awareness and confidence towards precision attachments. This is in accordance with the result showing that maximum positive responses for having used precision attachments is from 'MDS in Prosthodontics' group in >20 years of experience group. In total, only 34.1% of practitioners are confident enough to handle cases of precision attachments on their own.

85.2% responses from the lab technicians reported that less than five cases are being given to them by their respective practitioners in all experience categories. These less number of cases given to lab technicians shows lack of attitude and interest of dental practitioners towards precision attachment procedures. These results also imply towards a fact that the dental practitioners have lack of knowledge, skill and confidence in handling precision attachment cases optimally.

Small sample size of the lab technicians survey is a limitation of this study and therefore further questionnaire studies with larger sample size are needed for more accurate results.

CONCLUSION

From the results of this questionnaire based survey, following conclusions can be drawn:

a. Dental practitioners are aware of the concept of precision attachment, its importance and indications. However, knowledge regarding fundamentals and scientific knowhow, attitude and awareness were more in the group of dentists possessing a specialization in Prosthodontics.

b. Group of dental professionals possessing only graduation degree with less experience of practice do not have much exposure of precision attachments due to lack of attitude and knowledge. Also, dental graduates and post graduates from other specialities have less confidence in handling such cases when compared with prosthodontists.

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