

## ASSESSMENT OF KNOWLEDGE, ATTITUDE, PRACTICE BASED SURVEY ON ENDODONTIC INSTRUMENT SEPARATION

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### ABSTRACT

The aim of the present survey is to assess the knowledge, attitude and practice regarding the event of separation of endodontic instruments. Questionnaire based survey comprising 14 questions divided into knowledge based, attitude based and practice based questions. The questionnaire was circulated via electronic media through mails. 212 responses were received from the respondents. On analyzing the responses to the questionnaire, it was found that the most of the practitioners were looking forward towards use of digital dentistry based procedures to identify the separated instrument. Highly significant values were obtained when statistical analysis was done about the question pertaining to this trend for better clinical outcome with [p Value = 0.001], Other relevant facts being, Edta plays a significant role in managing such cases [p Value = 0.038], which was statistically significant. Within the limitations of the study, it shows that the knowledge with respect to CBCT based procedures is moderate compared to attitude and practice among respondents. The survey revealed that most of the participants were looking forward to enhance their knowledge and skills in the field of instrument separation.

**Key words:** Applications of digital dentistry procedures; CAD-CAM; Endodontics; File Retrieval KAP survey; Instrument separation.

### INTRODUCTION

Instrument separation is a significant endodontic challenge. Instrument separation impedes the successful endodontic outcome by generating pathosis in the periapical region and becomes the cause of lingering pain in the associated tooth region. Instrument separation is caused due to lack of attention of the operator during the filing motion and because of the use of old instruments over and over again. No endodontist will have an experience of not separating the instrument once or twice in his endodontic training. The aggressive filing motion also plays a

significant role in being the main cause behind the separation of instrument. Examination of the instruments for nicks and tears and loss of shine is most important thing to be examined before the use in the canal. This is the important step in avoiding the instrument separation. Our team has done previous studies in this field and also wants to do study in future as this is a challenging field. (Kumar *et al.*, 2006; Felicita, Chandrasekar and Shanthasundari, 2012; Krishnan and Lakshmi, 2013; Patturaja, 2016; Sivamurthy and Sundari, 2016; Felicita, 2017; Jain, 2017; Mp, 2017; Azeem and Sureshababu, 2018; Rao and Kumar, 2018; Sekar *et al.*, 2019) (Neelakantan *et al.*, 2011; Jain, Kumar and Manjula, 2014; Lakshmi *et al.*, 2015; Keerthana and Thenmozhi, 2016; Johnson *et al.*, 2019)

## MATERIALS AND METHODS

The survey was conducted in May 2020 among General dentists, PG students in endodontics, Endodontists to assess the knowledge, attitude and practice regarding the understanding of instrument separation in endodontics was done. This questionnaire based survey consisted of 12 - 15 questions with multiple choice. The questionnaire was divided into demographic data, knowledge based and attitude based. The questionnaire was circulated via electronic media through mail. The collected data was converted into excel sheets. Bar graphs and pie charts were used for pictorial representation of the result of the study.

## RESULTS AND DISCUSSION

Our survey revealed the following relevant information. 212 responses were received from the respondents. Among the 212 responses received from the participants, Most of the participants are female under the specialist category and males in the Non specialist category. Majority of participants were from the age group of 25 - 30 years at 49.1% followed by participants of the age group of 30 - 40 years at a percentage of 27.5%. The results obtained after applying the Chi square tests show no statistically significant difference [ $p > 0.05$ ] [Table 1]

The association between the field of practice of the participants and responses based on gender was evaluated. X axis denotes the field of practice, Y axis denotes the number of respondents. Most of the participants are female under the specialist category and males in the Non specialist category. In this graph, the males are represented by (Blue) colour and females by (Green) colour. Chi square test shows highly statistical difference in the responses between specialists and the non specialists [Pearson Chi square  $p$  value = 0.000 ( $p \geq 0.000$ )] [Figure 1]

The association between the field of practice of the participants and responses to the question of which is the first CAD-CAM device. X axis denotes the field of practice, Y axis denotes the number of respondents. Most of the respondents from specialists and non specialists belonged to the age group of 30 - 40 yrs (Brown Colour). Chi square test shows no statistical significant difference in the responses between specialists and the non specialists [Pearson Chi square,  $p$  value = 0.463 ( $p > 0.05$ )] [Figure 2]

The association between the field of practice of the participants and responses to the question that what was the frequency of cases of separated instruments was evaluated. X axis denotes the field of practice, Y axis denotes the number of respondents. Most of the respondents chose the option '1 in 15 cases' (Brown). Chi square test shows highly statistical significant difference seen in the responses between specialists and the non specialists [Pearson Chi square p value=0.018 [ $p < 0.05$ ]]. [Figure 3]

The association between the field of practice of the participants and responses to the question that whether they had encountered instrument separation cases was evaluated. X axis denotes the field of practice, Y axis denotes the number of respondents. Most of the respondents in the specialist category chose the option 'Yes' (Blue colour). Chi square test shows no statistical significant difference in the responses between specialists and the non-specialists [Pearson Chi square p value = 0.825 [ $p > 0.05$ ]]. [Figure 4]

The association between the field of practice of the participants and responses to the question that while obturating such cases whether the operator was able to reach the apex or not was evaluated. X axis denotes the field of practice, Y axis denotes the number of respondents. Most of the respondents from specialists chose the option 'Short of apex sometimes' (Brown colour). Chi square test shows a statistically no significant difference in the responses between specialists and the non specialists [Pearson Chi square p value = 0.331. ( $p > 0.05$ )]. [Figure 5]

The association between the field of practice of the participants and responses to the question that which is latest nanosized silica and zirconia based revolutionary material used with CAD-CAM devices was evaluated. X axis denotes the field of practice, Y axis denotes the number of respondents. Most of the respondents under the specialist category chose the option posterior teeth region (Green Colour) followed by both equally (Brown Colour), While the non specialist chose the option of posterior tooth region (Green Colour) majorly. Chi square test shows a statistically significant difference in the responses between specialists and the non specialists [Chi square p value = 0.003 ( $p < 0.05$ )]. [Figure 6]

The association between the field of practice of the participants and responses to the question that which age group has maximum number of instrument separation cases. X axis denotes the field of practice, Y axis denotes the number of respondents. Most of the respondents from specialists chose the option 'Patient in mid 30s' (Brown colour). Chi square test shows a statistically significant difference in the responses between specialists and the non specialists [Pearson Chi square p value = .001. ( $p < 0.05$ )]. [Figure 7]

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The association between the field of practice of the participants and responses to the question by respondents that whether they would like to use CBCT in the management of such cases was evaluated. X axis denotes the field of practice, Y axis denotes the number of respondents. Most of the respondents from specialists chose the option 'sometimes' (Brown) followed by Yes (Blue). Chi square test shows a statistically significant difference in the responses between specialists and the non specialists [Pearson Chi square p value = .006 ( $p < 0.05$ )]. [Figure 13]

The association between the field of practice of the participants and responses to the question by respondents that whether they used a conservative access cavity preparation or a non conservative access cavity preparation. X axis denotes the field of practice, Y axis denotes the number of respondents. Most of the respondents from specialists chose the option 'Depends on

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Our team has done previous studies in this field and also wants to do study in future as this is a challenging field.(Kumar *et al.*, 2006; Felicita, Chandrasekar and Shanthasundari, 2012; Krishnan and Lakshmi, 2013; Patturaja, 2016; Sivamurthy and Sundari, 2016; Felicita, 2017; Jain, 2017; Mp, 2017; Azeem and Sureshbabu, 2018; Rao and Kumar, 2018; Sekar *et al.*, 2019)(Neelakantan *et al.*, 2011; Jain, Kumar and Manjula, 2014; Lakshmi *et al.*, 2015; Keerthana and Thenmozhi, 2016; Johnson *et al.*, 2019)

## CONCLUSION

The most applications of CAD-CAM in Endodontics are ever increasing for the management of instrument separation cases . However there are also certain potential limitations of CAD CAM which the clinician should keep in mind while practicing in a clinical set up.

This survey was done to assess the knowledge, attitude and practice regarding the management of instrument separation cases in endodontics. This survey enables the reader to get a better understanding of the precise and indispensable knowledge about the current scenario among the dental operators for the management of instrument separation cases.. Within the limitations of the study, it shows that knowledge with respect to increasing awareness for management instrumentation separation procedures in endodontics is moderate,compared to attitude and practice among respondents. It is recommended that CDE programs can be conducted for dentists to increase their awareness and to gain more knowledge about the usage of further upcoming instrument retrieval procedures in Endodontic practice.

## ACKNOWLEDGEMENTS

We would like to acknowledge Dr.Hima Sandeep and Dr.Manish Ranjan for their constant encouragement and support

## AUTHOR CONTRIBUTIONS

All authors contributed equally for the study.

## CONFLICTS OF INTEREST

Nil

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## TABLES AND GRAPHS

		Gender		Total
		Male	Female	
Qualification	Specialist	48	96	144



	Non Specialist	40	28	68
Total		88	124	212

Table 1: Showing Demographic Data of participants, shows the distribution of respondents based on gender and the field of practice. General practitioners are denoted by (Non specialist), post graduates students and post graduate are denoted by (Specialists).

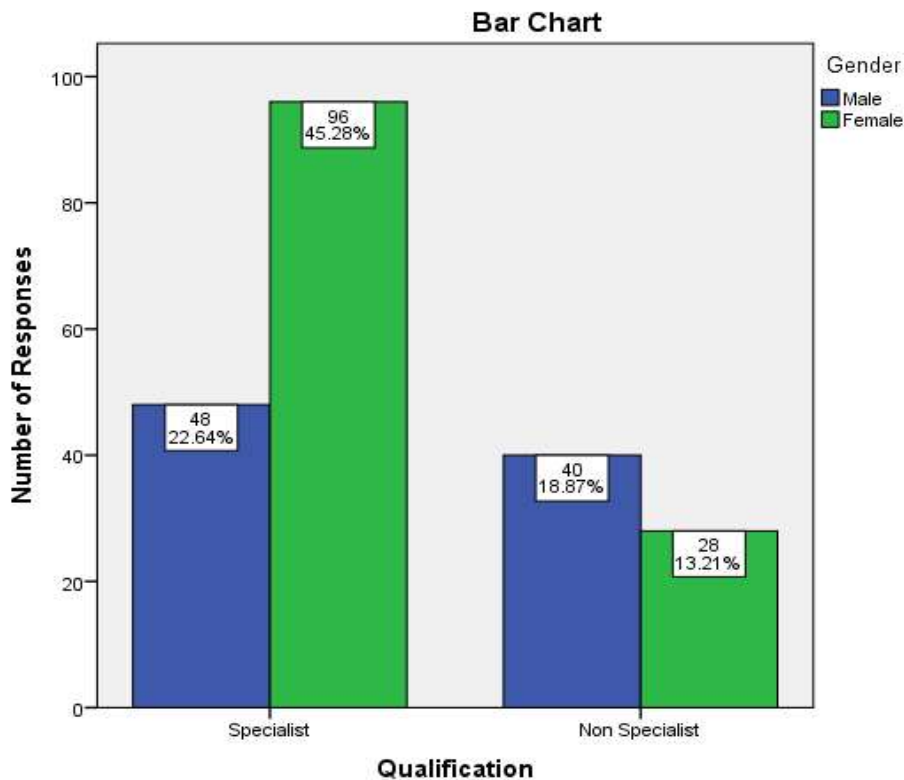


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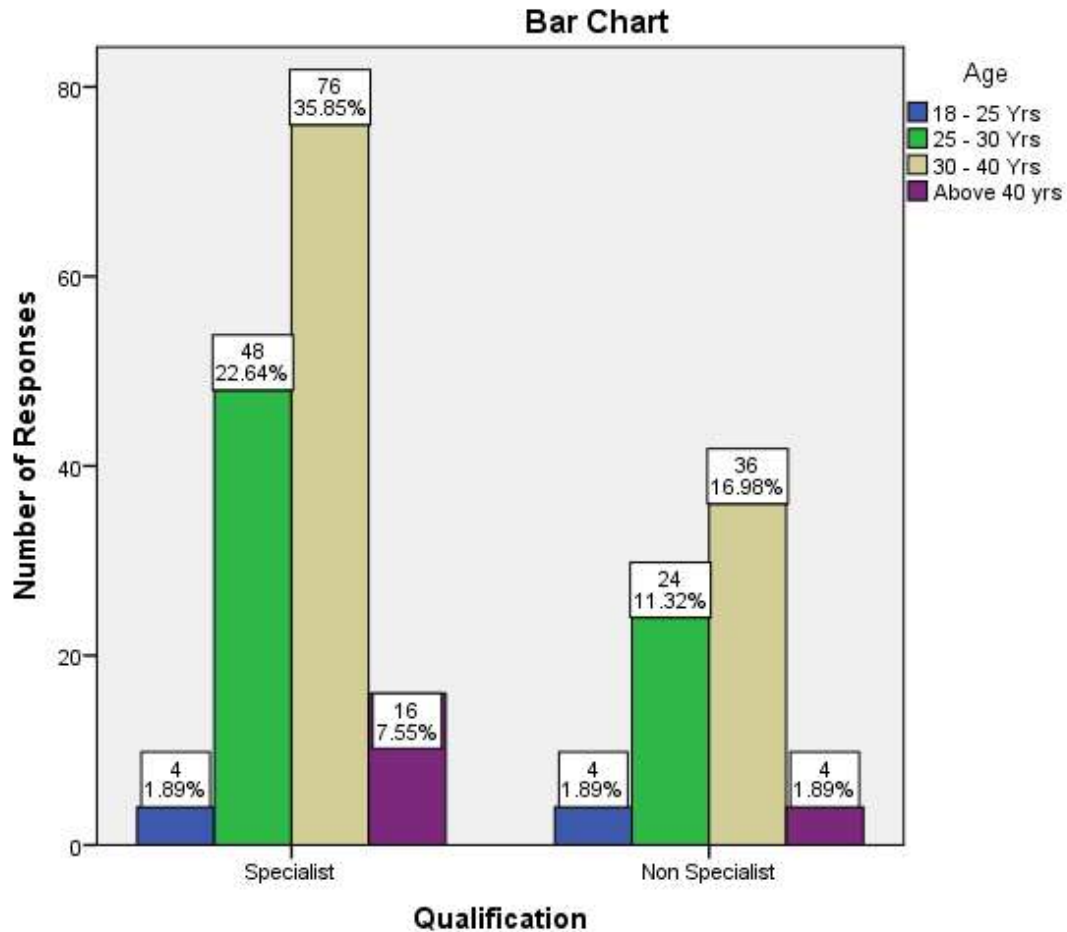


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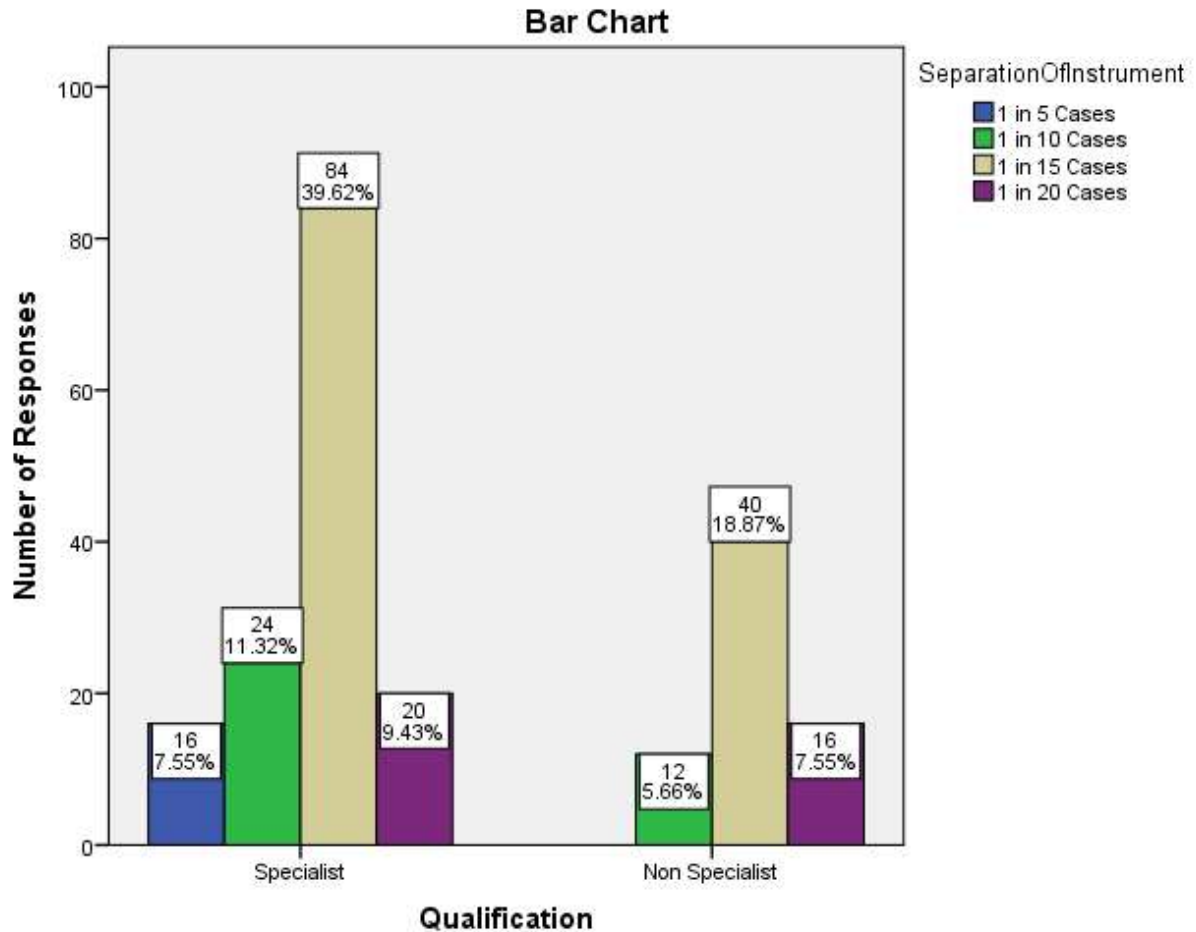


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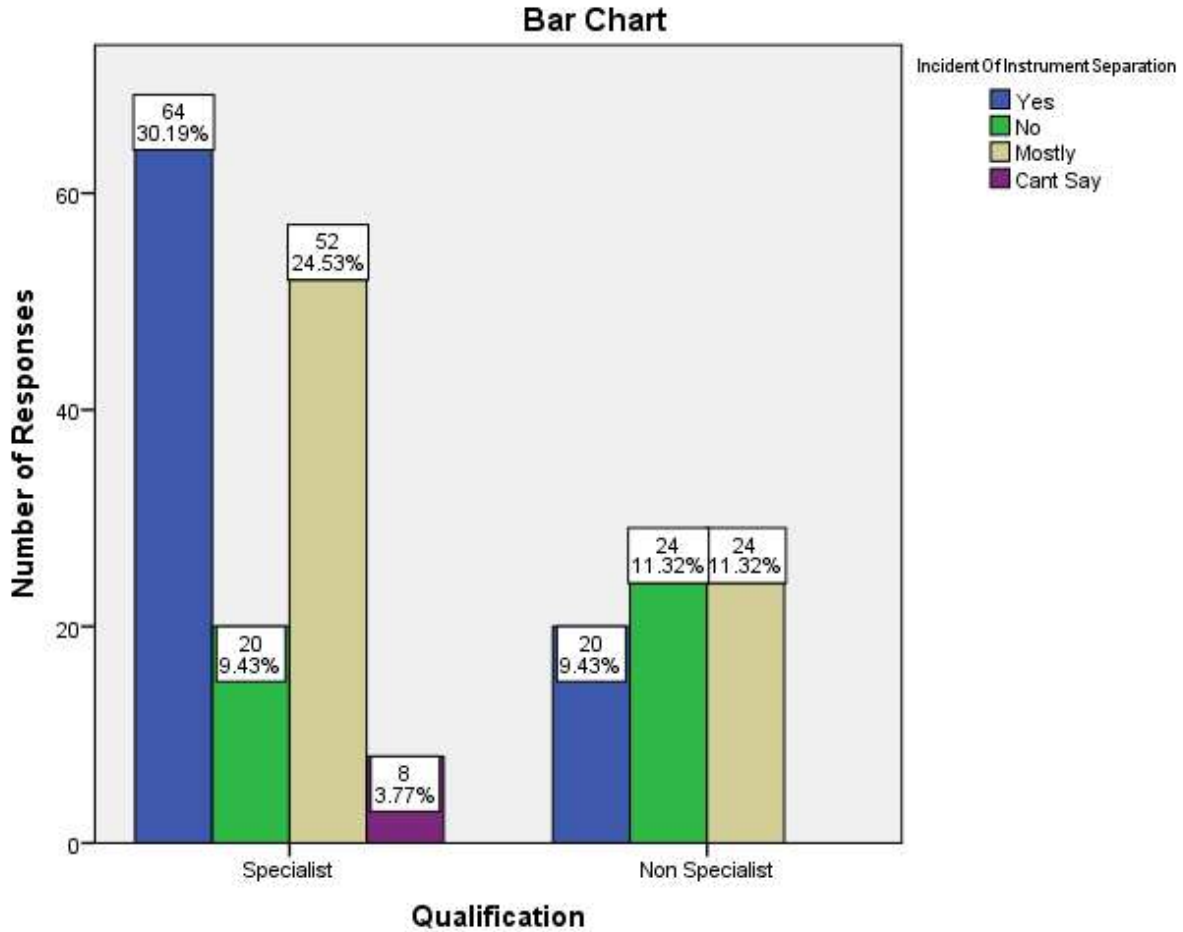


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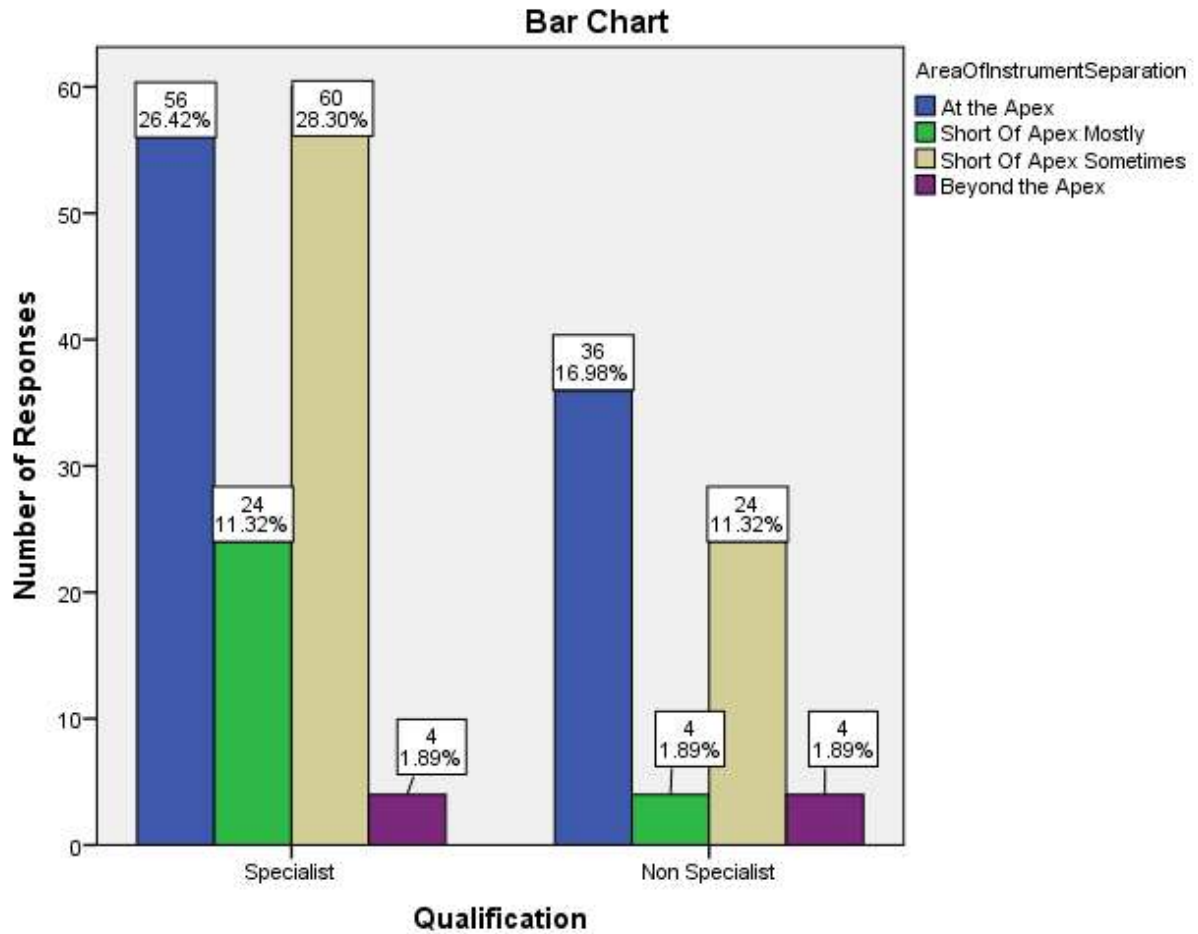


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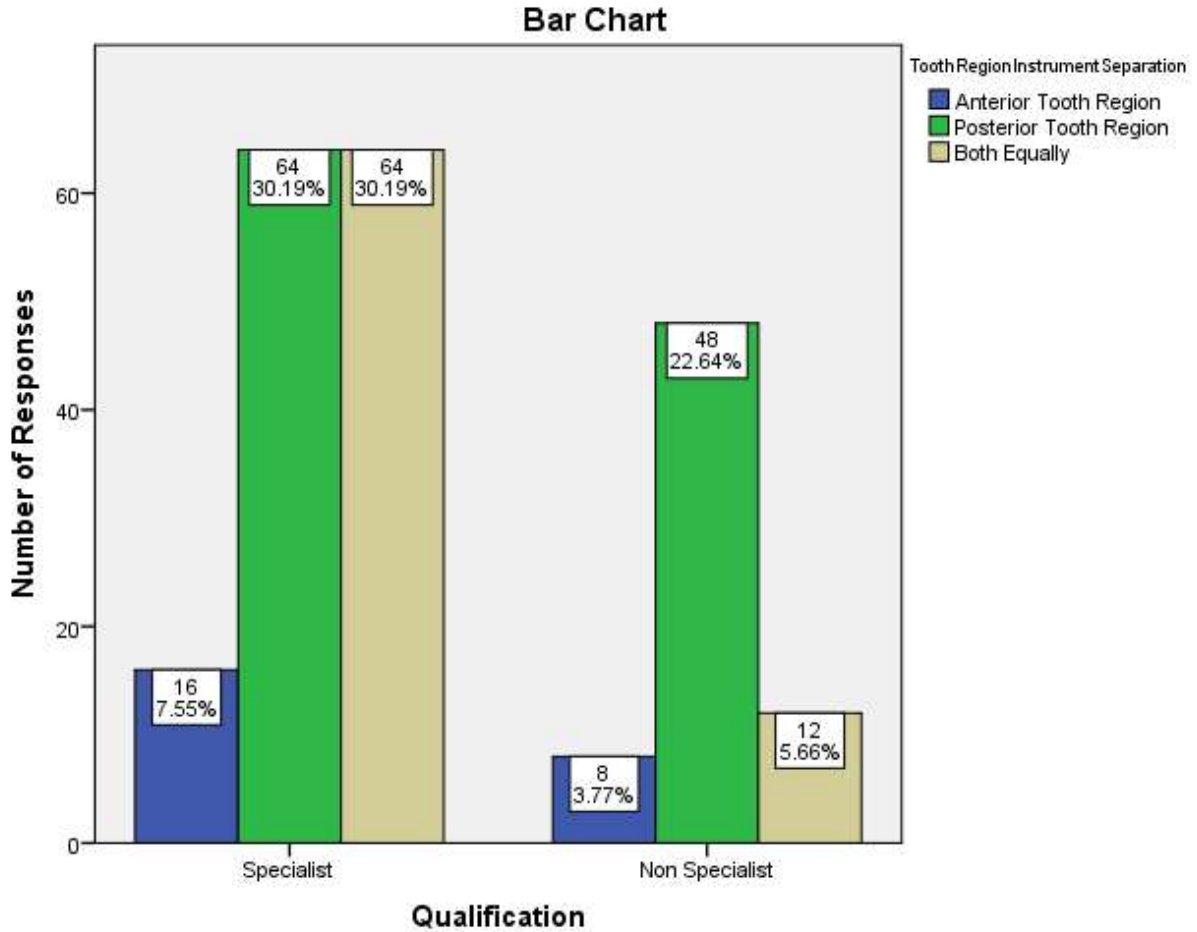


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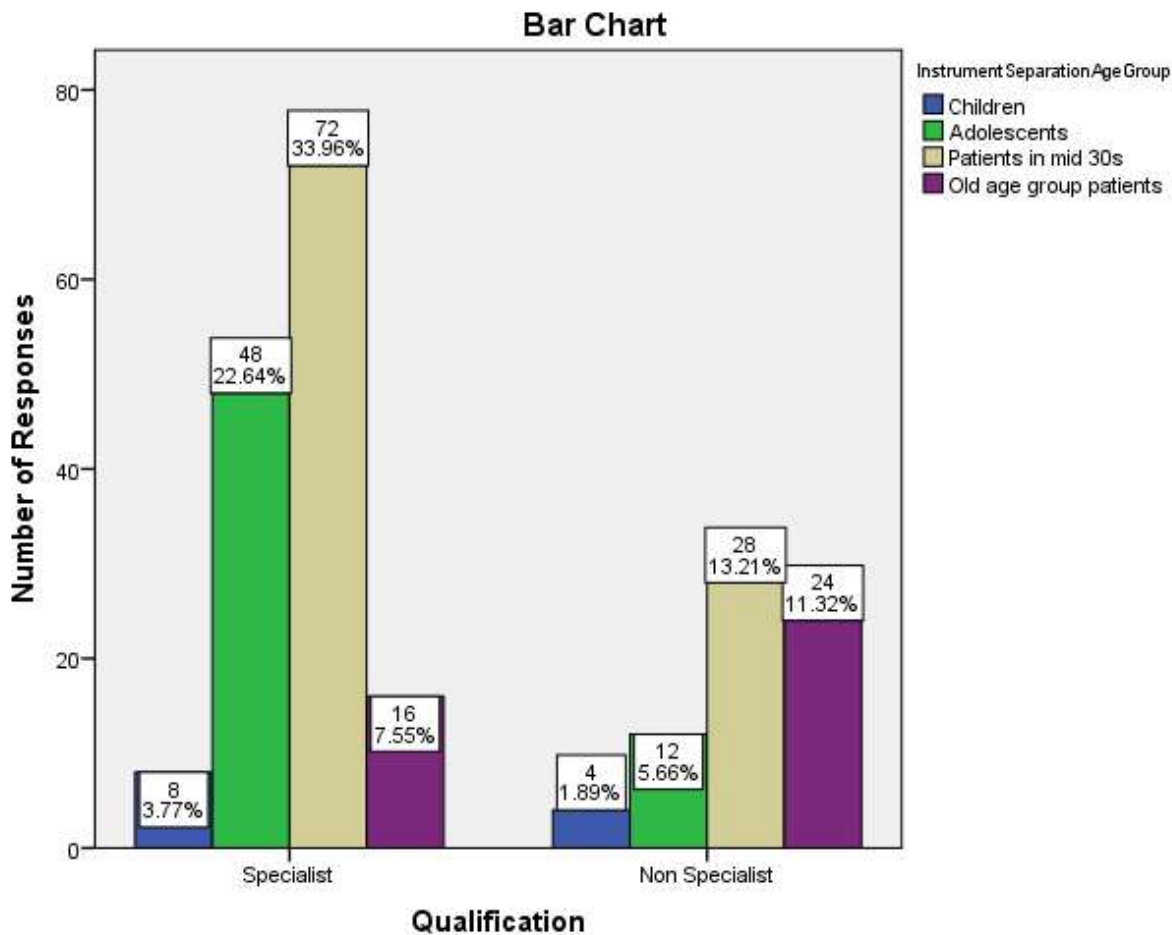


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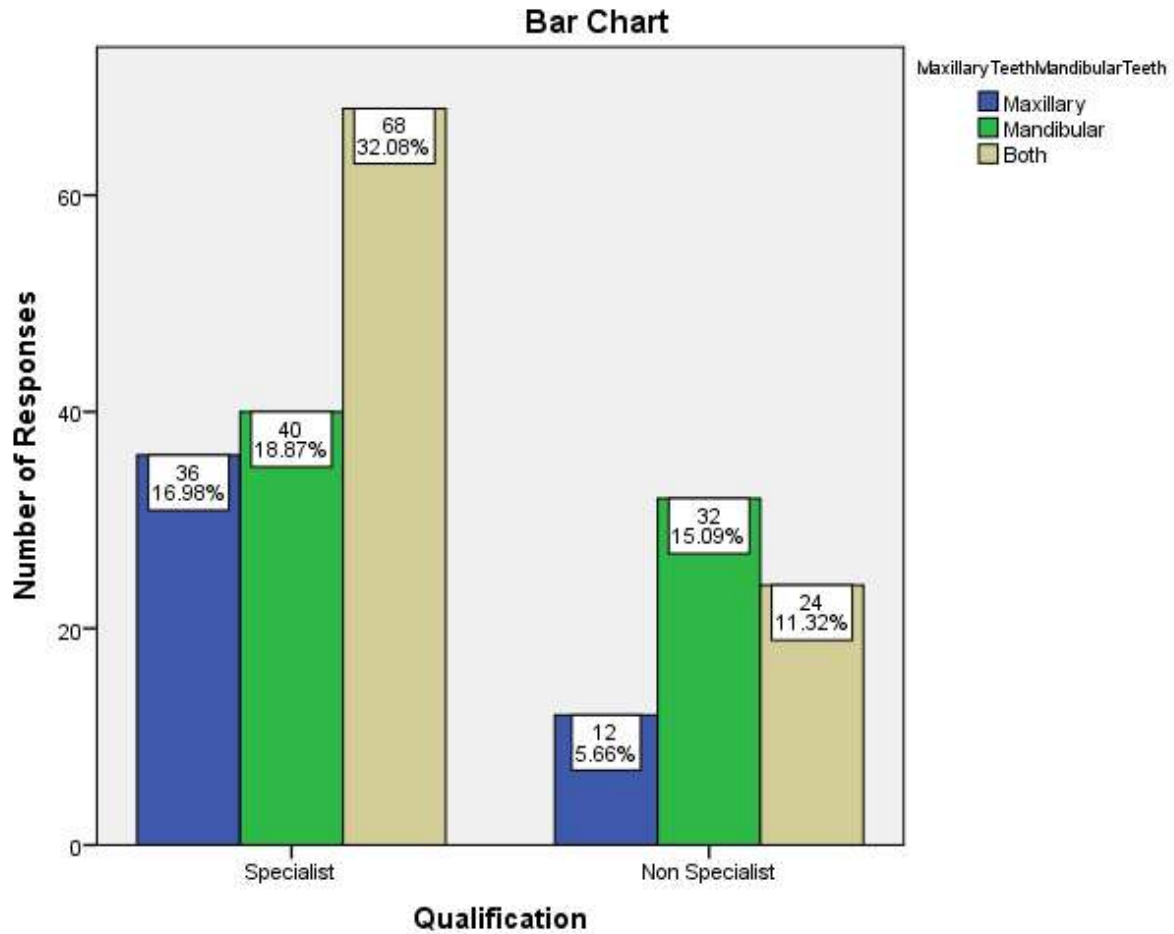


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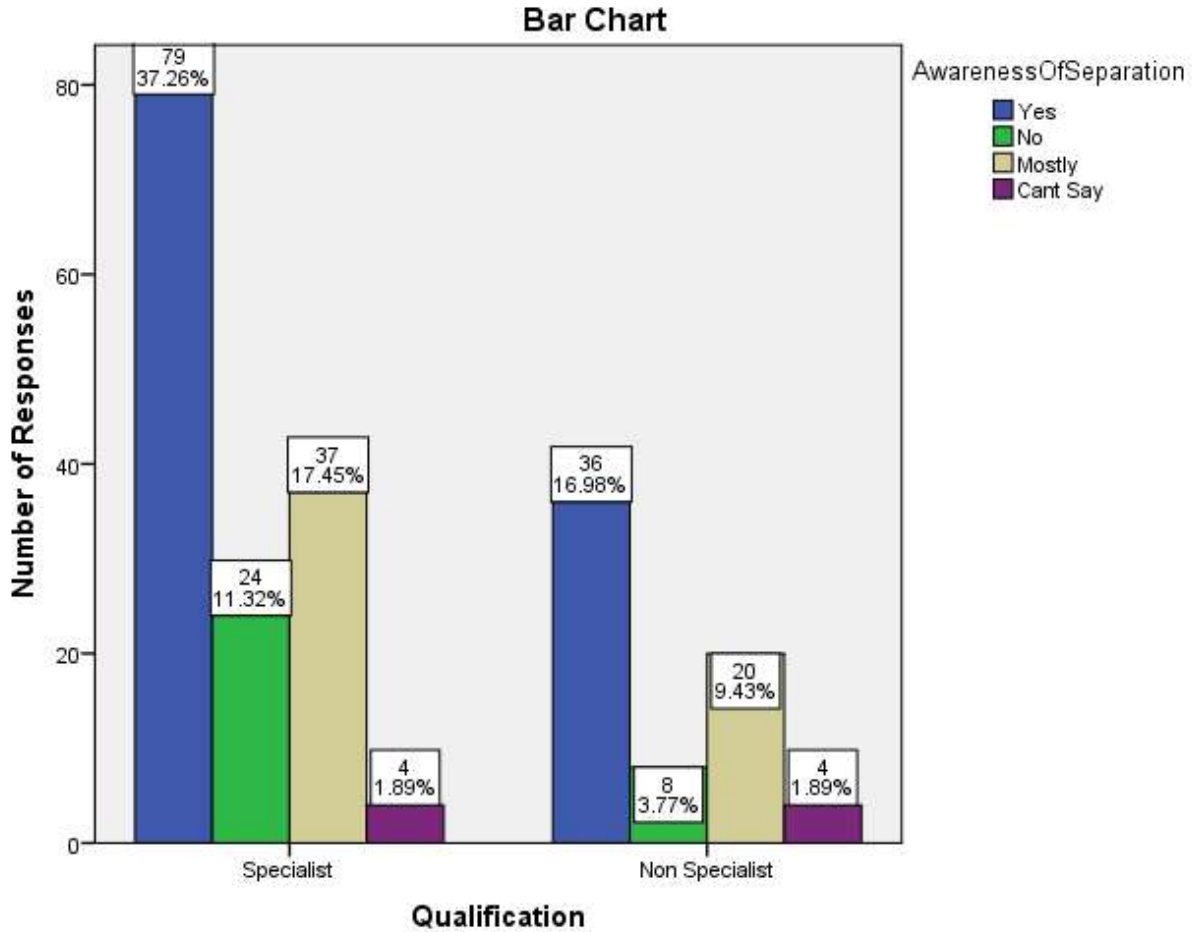


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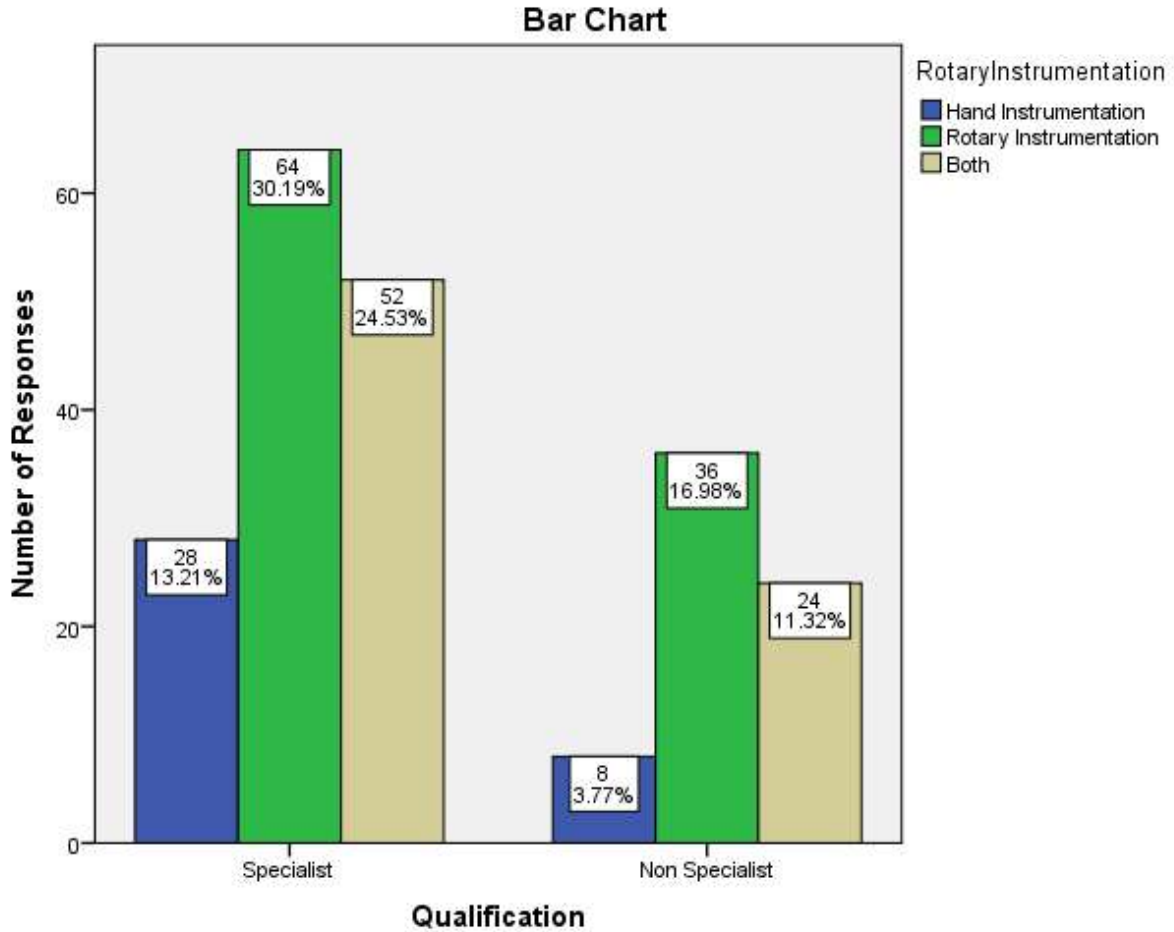


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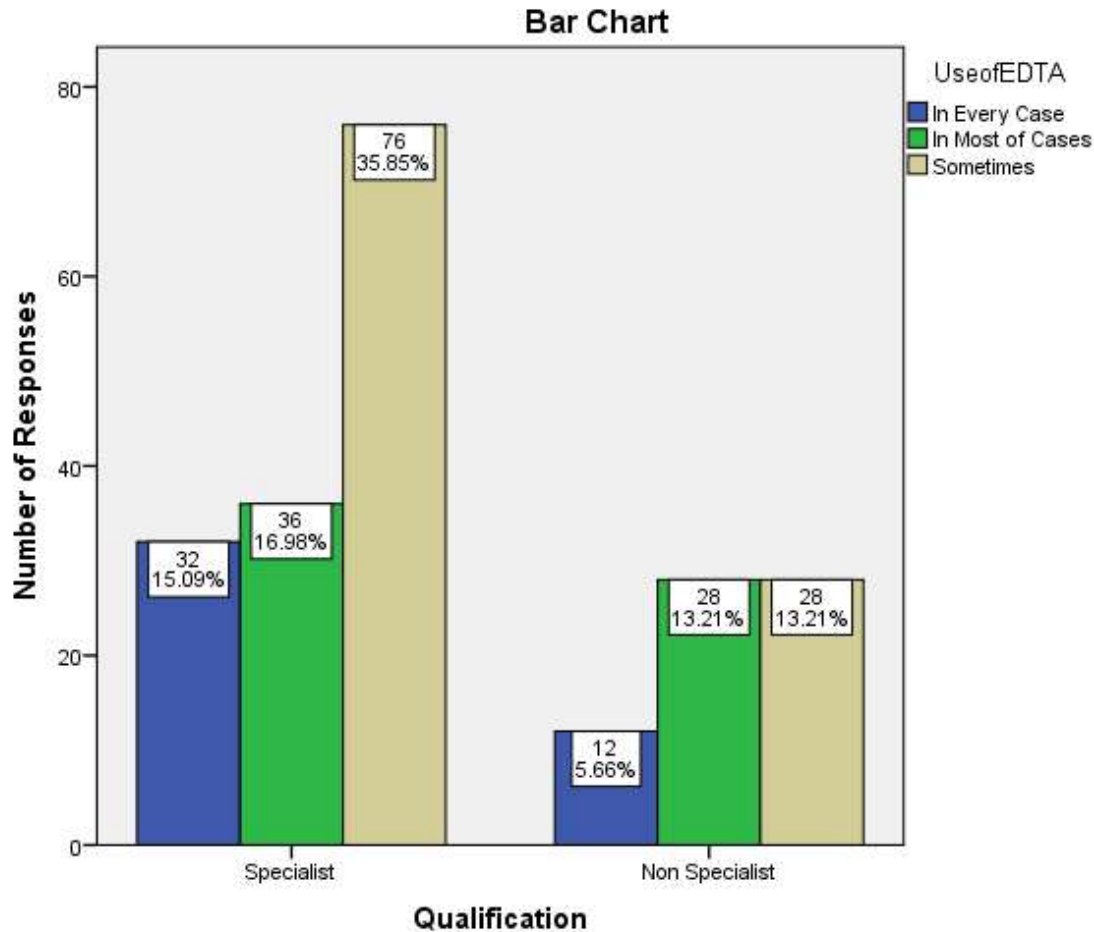


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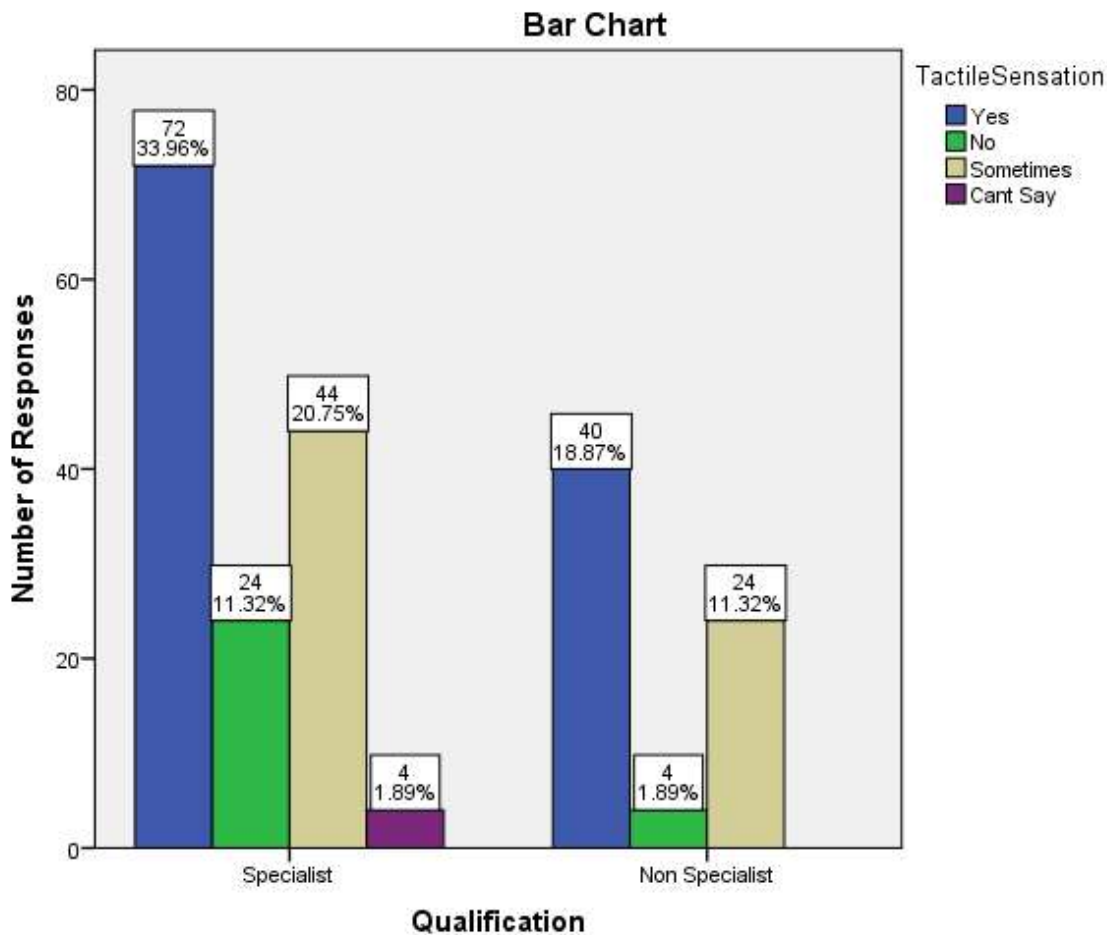


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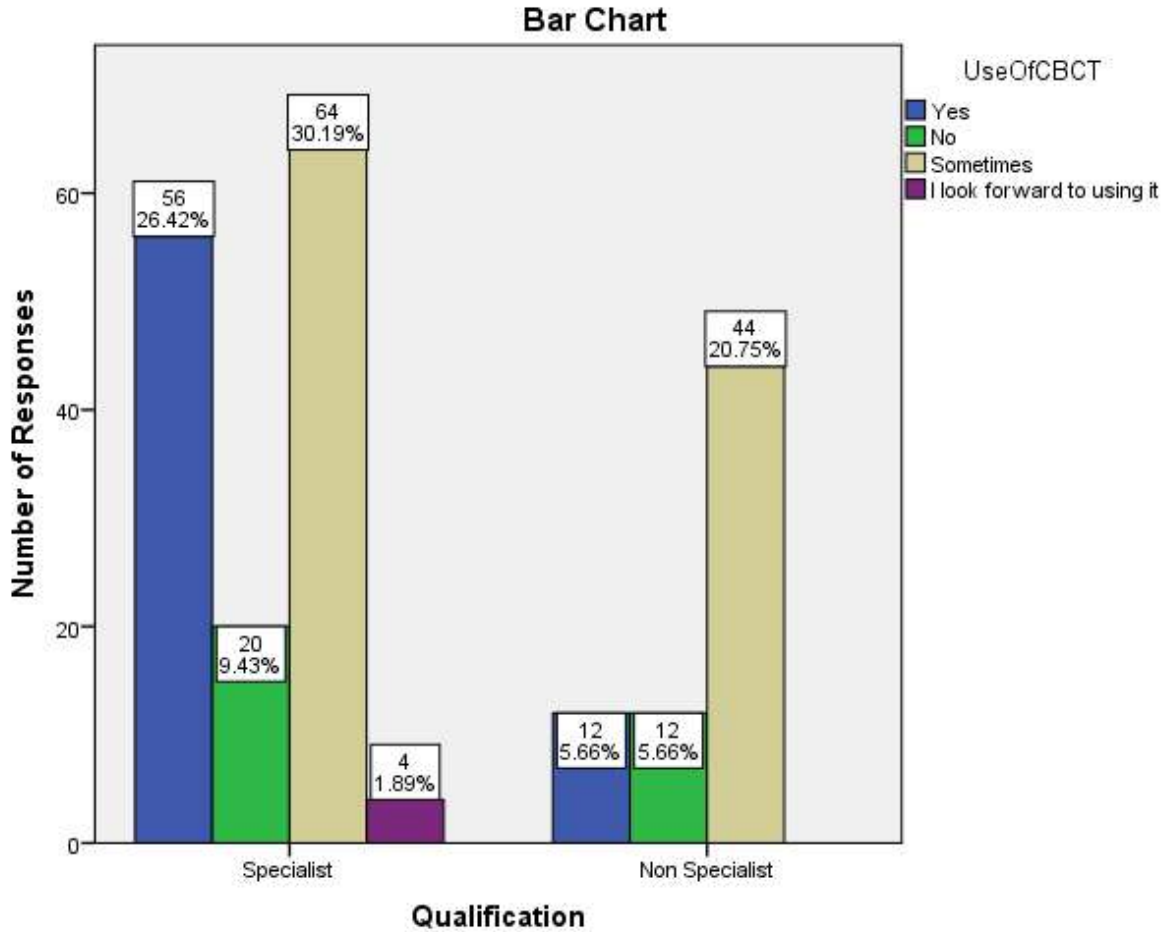


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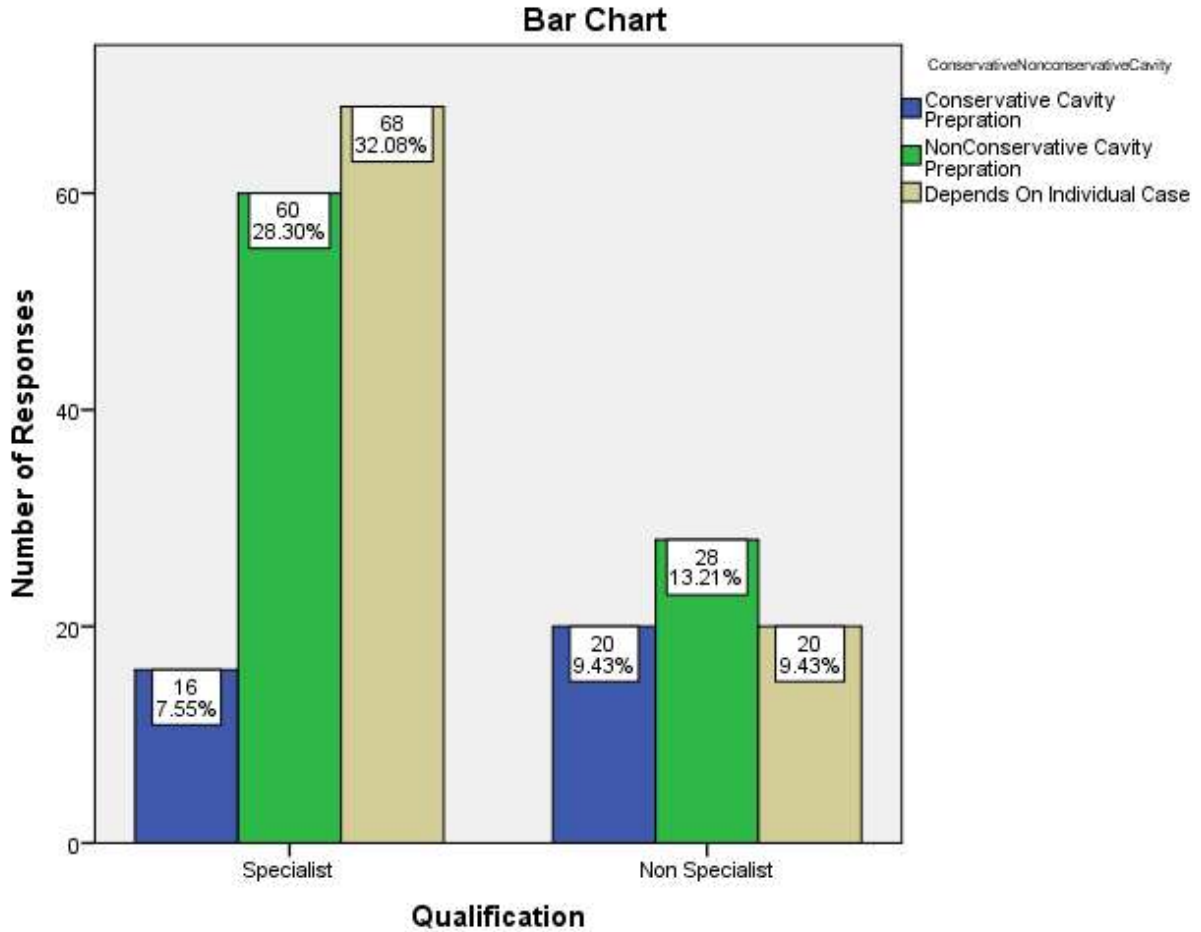


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