

**KNOWLEDGE, AWARENESS AND PRACTICE OF FOUR HANDED DENTISTRY
AMONG GENERAL PRACTITIONERS AND POST GRADUATES**

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CONFLICTS OF INTEREST:

The authors declare that there were no conflicts of interest in the present study.

Abstract:

Introduction: Four-handed dentistry is where highly skilled individuals work together as a team in an ergonomically designed environment which improves productivity of the dental team and also improves the quality of care for dental patients while protecting the physical well-being of the operating team.

Materials and methods : an online-based question name has been spread online to dental professionals or practitioners. The dental professionals or practitioners are well informed about the online survey and answer the questions with their full potential. Then the results were collected and statistically analyzed.

Result: We come to the conclusion that four handed dentistry is better when compared to other methods.

Keywords: Assistance, convenience, quality, time consumed.

Introduction:

Four-handed dentistry is a type of dentistry in which highly skilled personnel operate together in a planned environment setting to improve the productivity of the dental team as well as the quality of treatment provided to dental patients while safeguarding the operational team's physical well-being.^{[[1]]} Four handed dentistry is explained as a practice in which the dentist and the assistant work together as a team to perform operations that have been planned to benefit the patient.^{[[2]]} It demands a full-time chairside assistant who is well-organized and skilled, as well as someone who has been trained to assist the dentist during any clinical treatment and other dental office tasks.^{[[3]]} .^{[[4]]}

This involves different phases of office management which is a careful study with an intention to conserve time and reduce practice associated stress.^{[[5]]} In this form of dentistry, the dentist discharges some obligations to the auxiliary and assigns him all other tasks. ^{[[6]]}This complements the application of most modern dental equipment which has been deliberately selected for the operation.^{[[7]]} 4-Handed Dentistry has been around for over 60 years, yet is still the best way to run your practice on time and increase production ^{[[8]]}. Many practices either don't know about 4-handed dentistry, or don't understand it enough to take the time to learn it and execute it well.^{[[5]]} While some may think that it's just a dentist using a dental assistant each time they are doing a procedure, it's so much more than that.^{[[9]]}

Planning, training, correct equipment, and team buy-in are all part of the 4-handed dentistry process.^{[[10]]} Over the previous few decades, a considerable lot of new technology has been integrated into the modern dental practice ^{[[11]]}. No device, however, can boost productivity and alleviate stress and strain on the dental team as effectively as four-handed dentistry.^{[[12]]}. Combined with the practice of ergonomics in the workplace, this concept must be revisited by the dental profession. ^{[[13]]}The dentists of the 21st Century have had minimal exposure to true four-handed dentistry. Our research and knowledge have resulted in high-quality publications from our team ^{[[14-27]]}

So this study aims to know about the awareness of four handed dentistry and to increase the knowledge of dental practitioners on four handed dentistry. ^{[[28]]}

Material and methods:

A cross-sectional survey was conducted among the dental practitioners on the Knowledge attitude and practice of four handed dentistry .

This was a questionnaire-based survey study. The study protocol was approved by the institutional review board. The sample size of the study was 100 participants. The study had self-administered open and closed-ended questions.

The questionnaire included around 15 questions which consisted of demographic details also. The questionnaire was circulated through an online platform Google Forms survey link.

The data was collected from the Google Docs forms. The data was later analysed and the results were tabulated in Excel sheets using SPSS software. The aim of the study is to find out the efficiency of four-handed dentistry over other methods.

STATISTICAL ANALYSIS

Chi-square type of analysis was also done to assess the correlation. The results were represented with a pie chart.

Results :

The survey was conducted among hundred undergraduate and postgraduate dental college students in Chennai. The questionnaire was prepared and circulated online on the data that was collected and graphically represented using SPSS.

On studying the graphical data, the following results were obtained: 65% of the participants were BDS and 35% of the participants were MDS, out of 35% of the MDS participants who took part in the survey, 57% are orthodontists, 32% are endodontics and 10% are prosthodontists. A majority of 57% were aware of the practice of four-handed dentistry and 43% of the participants were not aware of it. When asked about the advantages of four-handed dentistry, a majority of 51% have answered decrease in stress, 22% have mentioned increased productivity and 10% of the participants have answered that passing of instruments will be correct.

A majority of 90% have answered that they practise four-handed dentistry, and 10% of the population have answered that they do not follow four-handed dentistry. In which a majority of 59% have answered that they have been practicing four-handed dentistry for the past 1 to 5 years and 31% of the population have answered 11 to 15 years. When asked if they think four-handed dentistry is efficient, 83% of the participants said yes and 17% said no.

When asked to compare between four-handed dentistry and two-handed dentistry, 83% of the population said four-handed dentistry and 17% of the population said two-handed dentistry. When asked about the efficiency of four-handed dentistry when compared to other methods, 49% of the participants said good, 22% said poor, 29% said great. When asked about the awareness of assistance in four-handed dentistry, 74% of the participants said yes and 26% said no. When asked if four-handed dentistry is practiced in a good number of clinics, 75% of the

participants said yes and 25% said no. A majority of 93% of the participants have said that forehand dentistry is convenient in long and tough procedures and 7% said no.

When asked if they have noticed practicing with awkward positions involving excessive bending of neck and prolonged sitting or standing position, a majority of 61% have said no and 39% said yes. A majority of 54% of the participants accept that four and dentistry is more efficient than 2 handed dentistry And 46% of the participants said no. When asked if there is a change of armament area in four handed dentistry from two handed dentistry majority of 52% said yes and 48% said no.

Discussion:

Various studies have shown a link between the use of four dental treatments and their clinical benefits. A summary of the survey of specialists showed that after performing a four-handed dental practice at a dental facility, efficiency and ease of work improved. According to the report, the usefulness is improved by 33% to 75%. However, for beginners, training seems very boring while meeting the criteria of true four-handed dentistry. For better results of this method, you need to get better knowledge and practical experience to achieve the maximum efficiency possible and profit from the four-handed industry. Delivery of dental mirrors and explorers:: The assistant transfers these two diagnostic instruments simultaneously at the start of most dental operations. The dental mirror is carried up from the handle with the right hand. Simultaneously, the explorer is carried up close to the assistant, holding one-third of the instrument's handle.

Dental assistants must fully know the methodology to be used in order to anticipate the grouping in which the equipment and materials will be used. With this knowledge, the dental team may establish a consistent practise for the presentation of most dental operations. Extra procedures, such as assigning all material arrangement and instrument movement to the partner, as well as the assignment of developed/progressed capacities to properly qualified assistants, will increase the utilisation of the dental specialist's time. The working group's access and perceptibility are further enhanced by using ergonomically designed hardware and placing the patient in a supine posture. (Figure2) Establishing heavy equipment and supplies within a 21-inch sweep of the associate's hands, as well as limiting developments to the mouth cavity and the adjacent exchange. The first step in this cycle is to work from a detailed treatment plan in order to prepare all of the essential instruments and materials for a well-organized method ahead of time.

Conclusion

This study represents the knowledge, awareness and perception of four handed dentistry among dental practitioners . From this current study, it is concluded that four handed dentistry is more opted by dental practitioners. And more studies have shown that four handed dentistry is more

efficient than two handed dentistry. This study is statistically significant. The limitation in this survey was to conduct among the dental practitioners.

Tables and figures:

| S.NO | QUESTION | YES | NO |
|------|--|-----|-----|
| 1 | Are you aware of the practice of four handed dentistry | 57% | 43% |
| 2 | Do you practice four handed dentistry | 90% | 10% |
| 3 | Do you think four handed dentistry is work efficient? | 83% | 17% |
| 4 | Are you aware that assistants are involved in four handed dentistry? | 74% | 26% |
| 5 | Do you think four handed dentistry is practiced in a good number of clinics? | 75% | 25% |
| 6 | Do you feel four handed dentistry is convenient in long, tough procedures? | 93% | 7% |
| 7 | Have you ever noticed that you practise awkward positions involving excessive bending of neck, prolonged sitting/standing? | 39% | 61% |
| 8 | Do you accept the fact that 4 handed dentistry is more time efficient than 2 handed dentistry | 54% | 46% |
| 9 | Does the armamentarium differ in four handed dentistry from two handed dentistry? | 52% | 48% |

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FIGURES AND TABLES

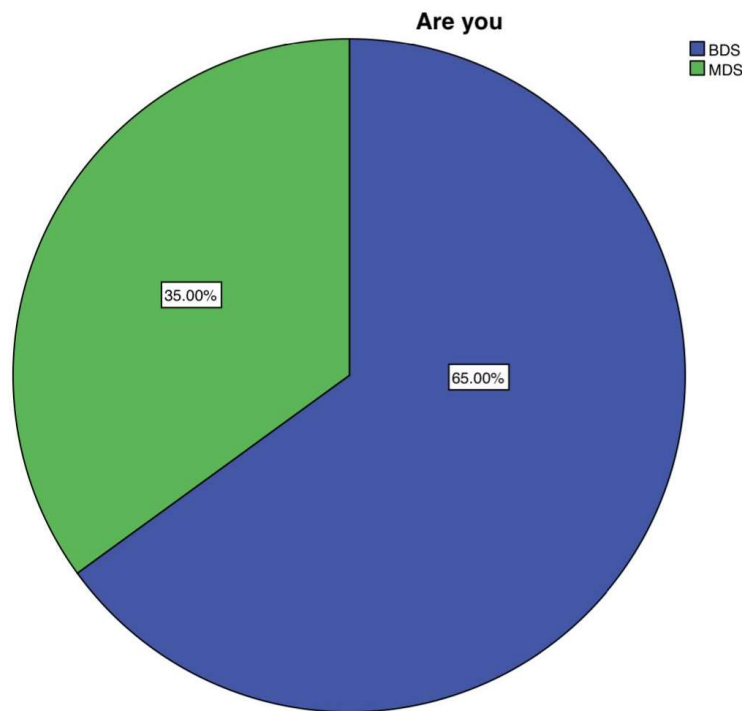


Figure 1 : pie chart showing percentage distribution of respondents on their educational qualifications. A majority of 65% are BDS and 35% are MDS.

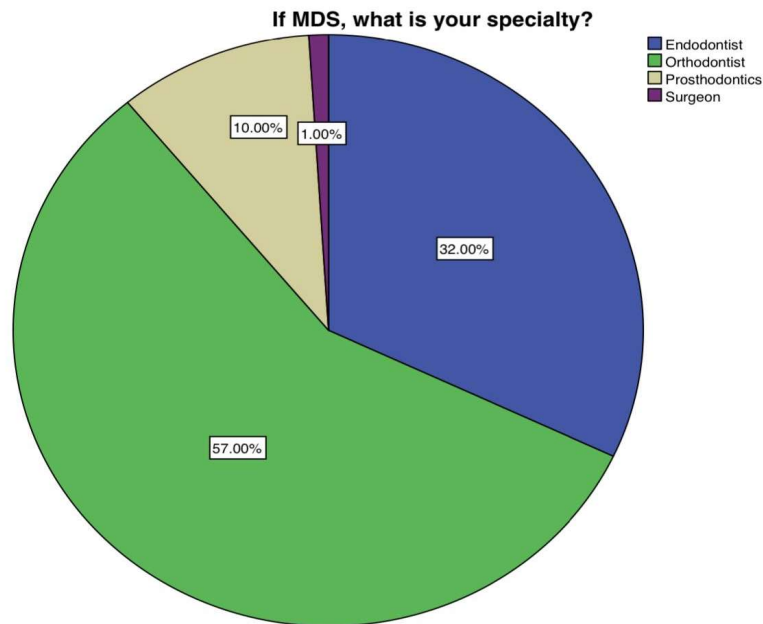


Figure 2: pie chart showing percentage distribution of respondents based on your speciality. A majority of 57% at orthodontists, 32% are endodontics 10% are prosthodontist, and 1% were surgeons

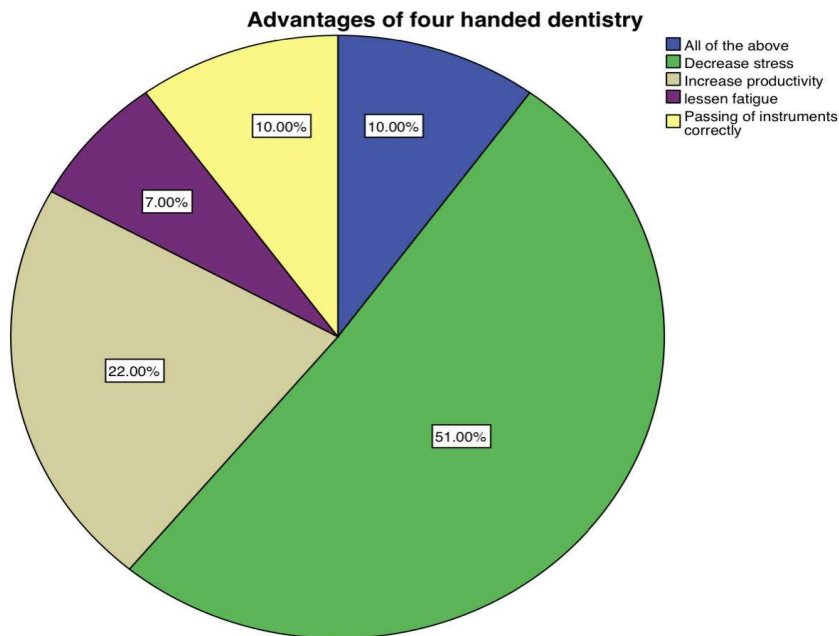


Figure 3: pie chart showing percentage distribution of respondents based on their awareness on the advantages of four handed dentistry, A majority of 51% have said decrease in stress, 22%

have said increased productivity, 10% have said passing of instruments correctly, 7% have mentioned lesser fatigue, and 10% have mentioned all of the above

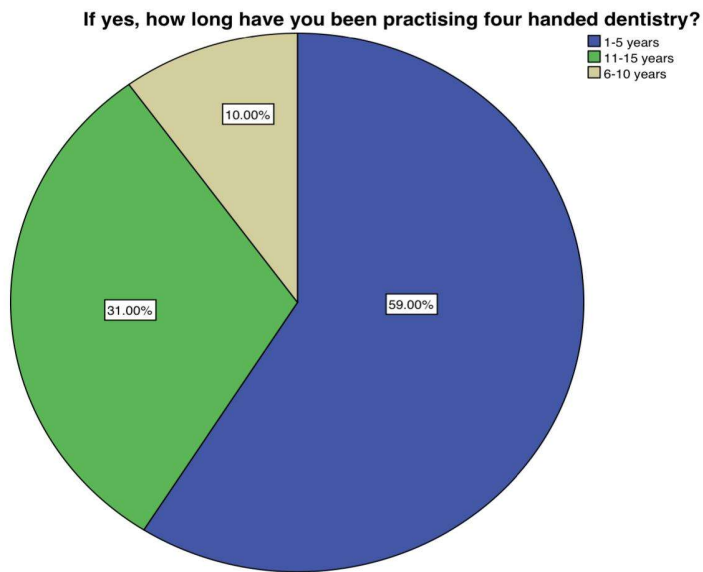


Figure 4 :Pie chart showing percentage distribution of respondents based on years of practice, a majority of 59% have said 1 to 5 years, 31% have said 11 to 15 years, 10% have said 6 to 10 years.

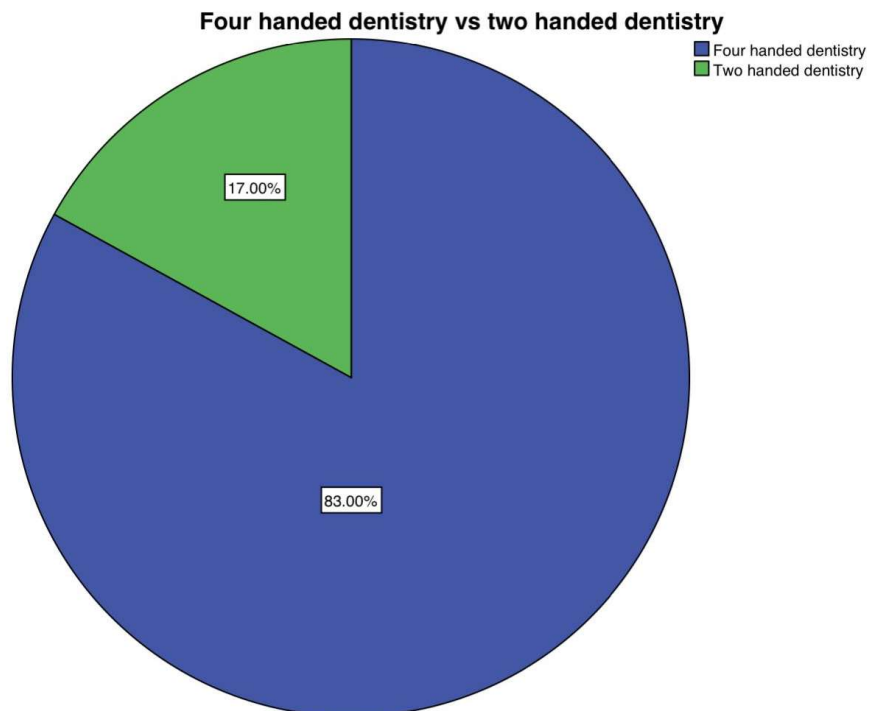


Figure 5 :Pie chart showing percentage distribution of respondents on their Choice between four handed dentistry and two handed dentistry, in which a majority of 83% have said four handed dentistry and 17% have said two handed dentistry.

How efficient do you think four handed dentistry is when compared to other methods

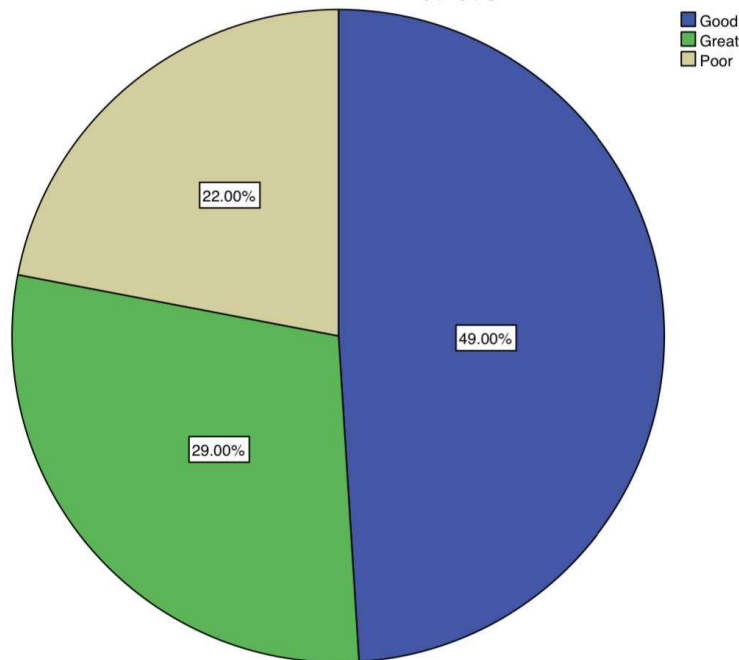


Figure amritha6 :Pie chart showing percentage distribution of respondents when asked how efficient four handed dentistry is when compared to others, in which a majority of 49% have said good, 29% have said great, And 22% have said poor.

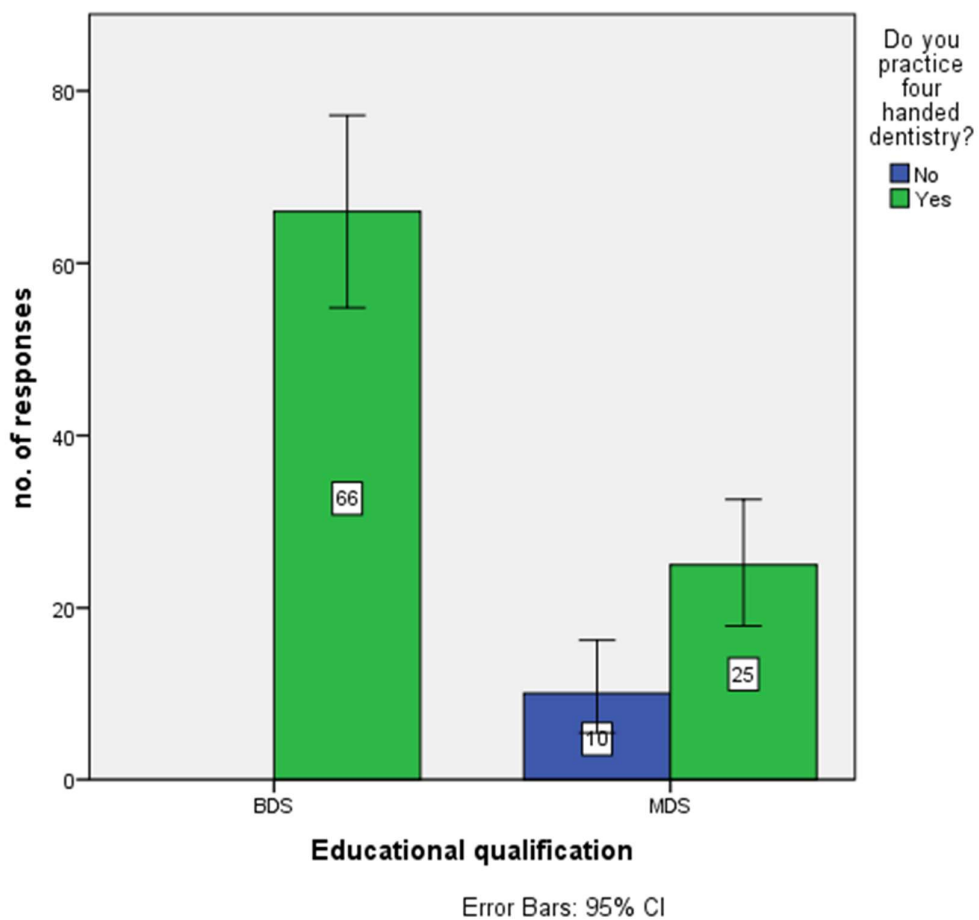


Figure 7 : The bar graph depicts the association between the degree of the individual and number of responses. X axis represents the degree and Y axis represents the count. Green represents yes, blue represents no. Higher number of participants who did BDS practiced four handed dentistry when compared to participants who did MDS. The difference was statistically significant(chi square test; p value =0.000- significant)

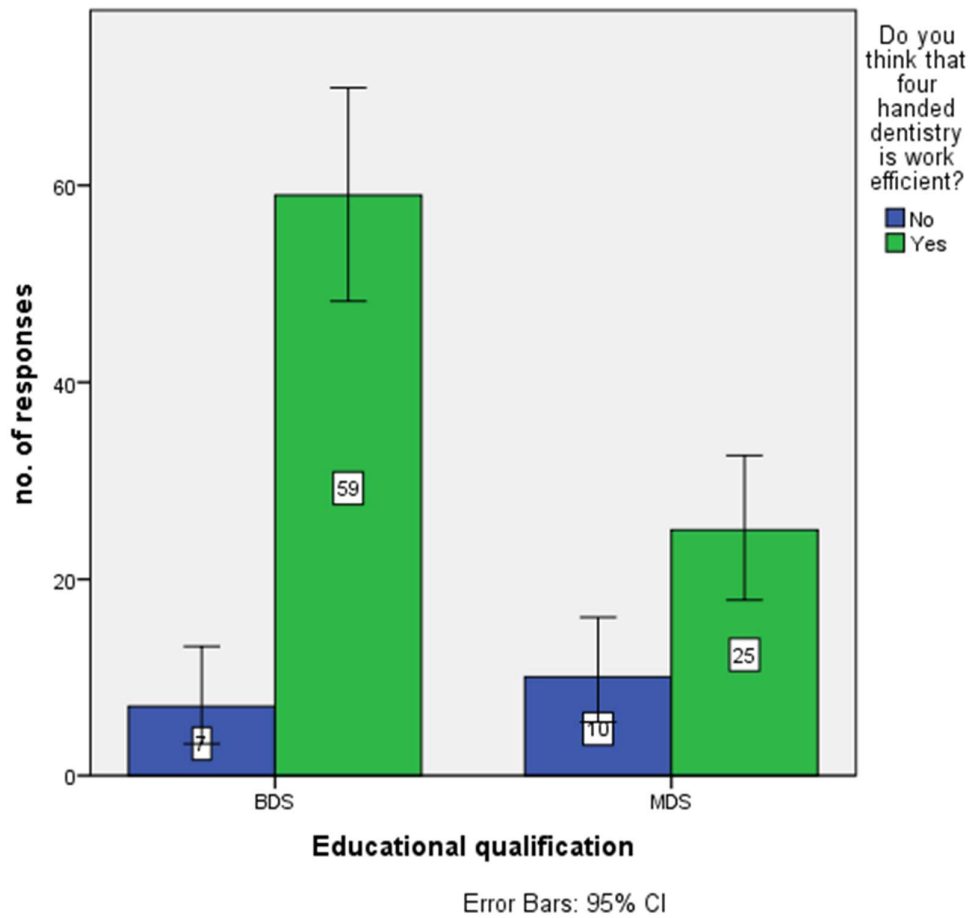


Figure 8 : The bar graph depicts the association between the degree of respondents and the number of responses. X axis represents the degree and Y axis represents the count. Where green represents yes and blue represents no. Higher number of participants who did BDS think that four handed dentistry is more efficient than other methods when compared to participants who did MDS. The difference was statistically significant(chi square test; p value =0.000-significant)