

ORIGINAL RESEARCH

Rationale for Necessity of Continuing Dental Education Program among Practicing Dentist: A Double Blind Study

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ABSTRACT

It is common knowledge, senior practitioners think that their practice keeps them well-acquainted with knowledge and skill and that they do not need any Continuing Dental Education (CDE) program. They think such CDE programs are only for junior practitioners.

Aims: This paper was done to investigate the relation between the seniority of practice and their need for CDE programs. To this end, the skill level of both senior and junior practitioners was analyzed.

Materials and methods: Casts of various dental surgeon around Chennai were collected from reputed dental technicians. A photograph of the prepared tooth was made. Using software 'Image tool' the taper of the prepared tooth was determined. Then the results were analyzed.

Result: The result show that the junior practitioners had a mean taper of 17.3402 with a max taper of 23.15 and a min taper of 14.07. Senior practitioners had a mean taper of 21.3420 with a max taper of 24.13* and a min taper of 15.22.

Conclusion: Analysis of the result shows interesting data, which leads to the conclusion that senior practitioners need CDE program as much as the junior practitioners.

Keywords: CDE program, Learning, Skill, Taper of tooth preparation, Image tool, Senior practitioners, Junior practitioners.

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INTRODUCTION

Clinical techniques are progressing at an exponential rate; thus, there are more opportunities for improving health, health care and quality of life.¹ For example, some branches of dentistry, such as implantology, were scarcely practiced 20 years ago, but today have become routine in everyday practice.^{2,3} This continuing evolution should compel professionals to stay informed and educated, as ignorance and uncertainty are associated with everyday decisions and treatment plans in health care can affect patients' well-being.⁴

It is a widely held view that practice makes a man perfect. This is the main tenant on which senior practitioners insist that they do not need any additional training. But recent research shows that, unless there is an update on knowledge,

both intuitive and practical, there is no progress, and the knowledge begins to stagnate and degrade.⁵ This is rarely accepted by the general population, who think that once knowledge is acquired, it stays so.⁶ But knowledge so acquired has to be regularly honed and updated.⁷ This is the main reason why Continuing Dental Education (CDE) programs are being conducted, so that in addition to new advices, previously learned skills may be further honed to perfection.

A plan to elucidate the readiness of practitioners on their day to day functioning was formed. Tooth preparation is an exercise in which have variables like taper, finish line clarity, etc. which can be observed and studied objectively. One of the main skills in tooth preparation is the amount of taper produced.⁷ The finer the knowledge and skill of the operator, the lesser will be the taper.⁸ This taper can be easily recorded and analyzed. With this idea, the following exercise was carried out.

To reflect the above ideas, a study to evaluate and compare the skill of senior and junior practitioners was proposed. As prosthodontics is a practice where both mind and hand have to work together to bring good result to the patient, a study to evaluate and compare objectively, the level of expertise of practitioners in preparation of tooth for a, complete coverage restoration, of both, juniors and seniors.

MATERIALS AND METHODS

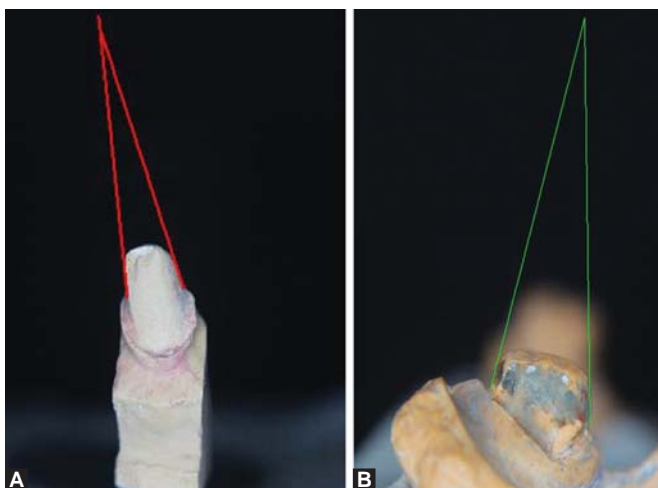
Dental casts (of tooth prepared for fixed prosthesis) were obtained from few notable dental technicians in Chennai (Tamil Nadu) in random. Then data about the dentist, i.e. their experience (in number of years after qualification) was obtained from the technician. The name and other data were not taken to maintain anonymity (blinding).

The casts were segregated based on the experience of the practitioner.

1. *Group 1:* Seniors (more than 5 years after qualification)
2. *Group 2:* Juniors (less than 5 years after qualification).

A total of 50 casts was collected under each category.

A photograph of the prepared tooth was made under standardized procedure.⁹ This image was saved. The set of images was given to the operator without any detail of the source of the cast or its image. Then the image was opened in MS Paint software and a line was drawn contacting the axial surface. Then the lines were extended to meet (Figs 1A and B). This modified image was viewed in Image Tool



Figs 1A and B: Lines being drawn on the axial surfaces of the image of the prepared crown

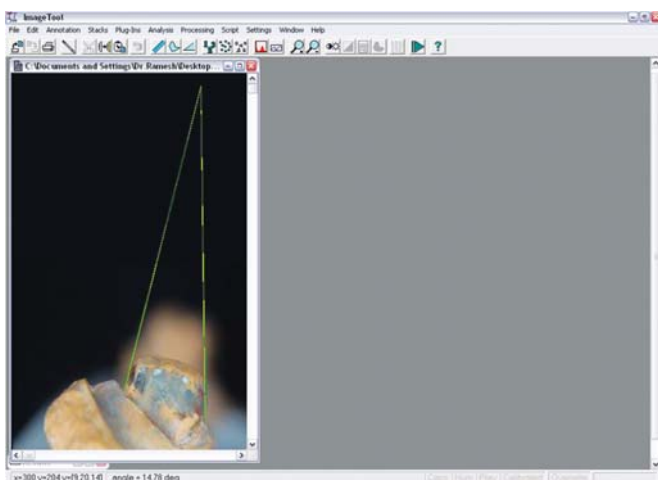


Fig. 2: The angle between the lines drawn is measured using image tool

program.¹⁰ Using the tool in this software, the angle between the previously drawn lines was read out and tabulated (Fig. 2). The data were tabulated and statistically analyzed.

As this study was done on general practicing dentist, ethical clearance was obtained from the Ethical Committee of the Indian Dental Association, Chennai Branch.

STATISTICS

Based on an earlier pilot study, the sample size of the study was estimated. The α error was set at 5% and β error was set at 95%. Then the sample size was calculated and was found to be 50 per group. The data was obtained from the blinded operator was collected and collated. The t-test was

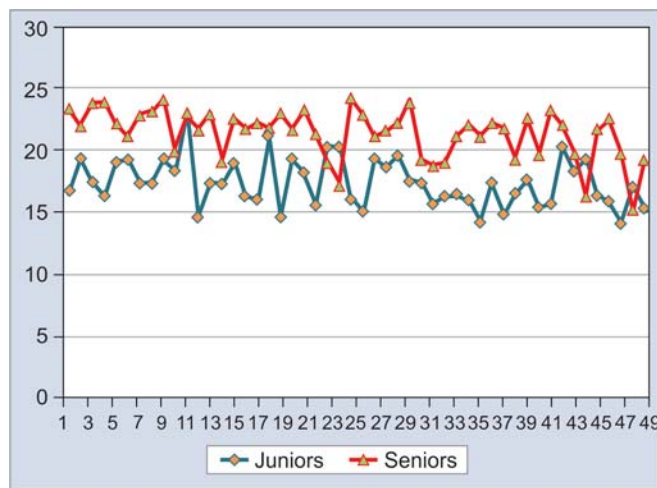


Fig. 3: The performance of senior and junior practitioners

done using SPSS 17 software. The results were calculated and tabulated.

RESULTS

The taper produced by the senior and junior practitioners are shown in Figure 3. The result (Table 1) shows that junior practitioners had a mean taper of 17.3402 (a max taper of 23.15 and a min taper of 14.07) with an SD of 1.95293. Senior practitioners had a mean taper of 21.3420 (with a max taper of 24.13 and a min taper of 15.22) with an SD of 1.99731.

The results show that junior practitioners made lesser mean taper (17.3402) and hence were producing better result. They also did better consistently with lesser interoperator variability (SD: 1.95293), this shows consistency and repeatability. The senior group had more mean taper (21.3420) in their preparation and hence a poorer result. They also exhibited more interoperator variability (SD: 1.99731). On statistically analyzing the result, it was found that the difference between the results was statistically significant ($p \leq 0.000$). Graphical representation of performance of senior and junior practitioner is shown in Figure 3.

DISCUSSION

The need for continuing education has to be felt by all practitioners. Its importance cannot be emphasized enough. But survey shows that doctors attend conferences and CDE program more for fraternizing and enjoying,¹¹ rather than

Table 1: Comparison of performance (t-test)

| Group | | N | Mean | Std. dev. | Std. error | T | p-value |
|-------|--------|----|---------|-----------|------------|---------|---------|
| Taper | Junior | 50 | 17.3402 | 1.95293 | 0.27619 | -10.130 | 0.000 |
| | Senior | 50 | 21.3420 | 1.99731 | 0.28246 | -10.130 | 0.000 |

the more important portion of such events *viz* the knowledge acquisition. To reinforce the need for continuing knowledge to the senior practitioners is the need of the hour, this is more so because, older learners have slower reaction times than younger learners as we need more time to learn new things as we age.¹²

Few changes have been found in both sensory and short-term memory as we age, but long-term memory declines. Older adults have a harder time acquiring and retrieving information and they experience difficulties in organizing new material and in processing it.¹³ This data needs to be educated to all population of practitioners as the junior practitioners are not far behind, as they will be the senior fellows tomorrow. So not only do the seniors alone need to be motivated, it is also important to keep the cutting edge of the juniors sharp by continuous exposure to recent trends.

The study clearly demarcated the need for senior practitioners to do more than just practice, and to proceed to acquire recent knowledge and to expand on previous knowledge. Furthermore, the assessment of the 'niche of knowledge'¹⁴ has to be done to provide the need of the hour, rather than the dull repetition of previously done exercises. This will not only bring in new ideas but also keep alive the interest of the participating doctors. This practice of improvement on 'niche of knowledge' can only be brought about by the participants themselves by their perceived need. This is only possible by regular self-assessment and review.

This study shows clearly, dentistry is also just another branch of science which needs constant review and upgradation as 'old learners' are problem centered and result oriented and 'young learners' are subject and future oriented.¹⁵ To bring both these diverse learners to the same platform need, a thorough understanding about the needs of each peer group is necessary.

CONCLUSION

As previously stated this study did bring in results that were contrary to popular belief. The result of the study shows that, seniority in practice is not a criterion for producing better results. The performance of seniors may be due to the attrition of knowledge with age and reduction in response time. The better performance of junior practitioners can be attributed to their exposure of newer techniques and instruments when compared to their seniors. These changes needs to be acknowledged and acted upon or else the competence of the practitioners will come to question.

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