EFFECTIVENESS OF UNDERSTANDING ON LEVEL OF ARTICLES SELECTED FOR EVIDENCE-BASED DENTISTRY TRAINING

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Abstract

Introduction: Evidence-based dentistry has been more widespread than ever as knowledge obtained from high-quality, evidence-based science is made accessible to physicians and patients by professional guidance. This need can be met by formulating evidence-based best-practice professional recommendations that clinicians can adhere to with simple chair-side and patient-friendly models.
Aim: This study aimed to analyze the effectiveness of understanding on the level of evidence among Undergraduate dental students.
Material and Methods: The study is conducted among second-year students of Saveetha Dental College. The evidence level of articles checked before and after training on the level of evidence study. The comparison of evidence level knowledge done by paired t-test using SPSS software.
Results: The mean value of the pre-training was 6.09 out of 10 and in post-training, the mean score was 7.99 out of 10 and the results showed after training with a mean value of 8.00 for males and 7.98 for females with a significance limit of p value as 0.001 which is statistically significant.
Conclusion: It was concluded that the training on the level of evidence was effective among the undergraduate students and found that males scored higher than females in both pre and post-training analysis.

Keywords: Evidence, Level, Training, EBD, Undergraduate, innovative technique.

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1. Introduction

Evidence-based dentistry (EBD) is a more general aspect of the trend towards evidence-based medicine and other evidence-based activities. Extensive access to research on the Internet covers various facets of dentistry for both dentists and patients. This has created a need to ensure that the proof referred to is true, credible, and of high quality.(1) Evidence-based dentistry has been more widespread than ever as knowledge obtained from high-quality, evidence-based science is made accessible to physicians and patients by professional guidance. This need can be met by formulating evidence-based best-practice professional recommendations that clinicians can adhere to with simple chair-side and patient-friendly models. (2)

Evidence-based dentistry has been described by the American Dental Association (ADA) as "an approach to oral health that involves the careful integration of rigorous reviews of clinically appropriate empirical evidence related to the oral and medical condition and experience of the patient, the professional skills of the dentist and the patient's treatment needs and preferences. Three main pillars or principles exist in evidence-based dentistry. The three pillars are defined as 1) Relevant scientific evidence, 2) Patient needs and preferences and 3) Clinician's expertise.(3)

The study done by Vineeth Dhar explained the whole concept of EBD and interpreted that clinicians are expected to keep up with the advancements in dental therapies, materials, and clinical recommendations. (4,5)Further, the study done by Cheryl et al concluded Evidence-based decisions must increasingly include considerations and analyses of the cost-and risk-benefit analysis, historically the field of comparative efficacy studies. (6,7) The study by Franceso helps to identify areas for improvement in EBP education to advance dental students' preparation to become evidence-based practitioners(8,9).

As health care providers, it is vital that physicians and dentists provide their patients with the best possible care. This needs not only a solid educational basis but also a good source of existing best evidence to validate their care decisions. (10) To do this successfully, such skills need to be acquired, such as the goal of evidence-based dentistry to provide improved education for the clinician, efficient treatment for the patient, and, eventually, an increase in the status of the discipline. (11)The key to finding is to start with a concentrated, well-constructed clinical question. Evidence-based oral health treatment involves the hunt for the latest evidence, the objective review of the evidence, and the alignment of evidence with the knowledge and expertise of the provider. Also, closes the divide between scientific science and real-world dental experience and offers dentists powerful tools to understand and incorporate research results.

Our team has extensive knowledge and research experience that has translate into high quality publications (12–21).This study aimed to analyze the effectiveness of training on the level of evidence among Undergraduate dental students.

2. Materials and Method

Study design and population:

The study is conducted among second-year dental students of Saveetha Dental College, in the year February 2021 to assess the effectiveness of training on levels of EBD articles. The study is conducted among ninety second-year students of Saveetha Dental College aged between 18-20 years. The students of the first year and third to final years were excluded. The sampling method used as simple random sampling. In this cohort study, dependent variables were gender and Pre basic scores and independent variables were age and year of study.

Material preparation and methodology:

A set of 10 research articles with different study designs including case reports, case series, cohort study, case-control study, randomized clinical trials, systematic reviews, and reviews were collected. The clues of the study design in those articles were hidden and circulated among the students. Internal and external validation was done for the article selection. A pre-test was conducted on the identification of study design and leveling of evidence was done and the scores out of ten marks were obtained and recorded in google sheet. Followed by an interactive training on article identification and the Oxford level of evidence of articles was given to the same students. After the training, a post-test was conducted with the same set of articles on which the clues were hidden. The scores out of ten marks of the post-test were also recorded in the same google sheet. The gender of the study population was also noted.

Statistical analysis:

The collected scores out of ten marks of pre and post-test analysis in the google sheets were exported to SPSS version 23 and analyzed statistically. The comparison of evidence level knowledge was done by paired sample t-test with a significance limit of 0.001. Gender comparison was done by Chi-square analysis with a significant p-value set at 0.05.

3. Results

GROUPS	N	MEAN	STD.DEVIATION	STD.MEAN ERROR
BEFORE TRAINING	**90**	**6.09**	**1.763**	**0.186**
AFTER TRAINING	**90**	**7.99**	**1.076**	**0.113**

Table 1: Mean and Standard deviation of the scores obtained before and after training

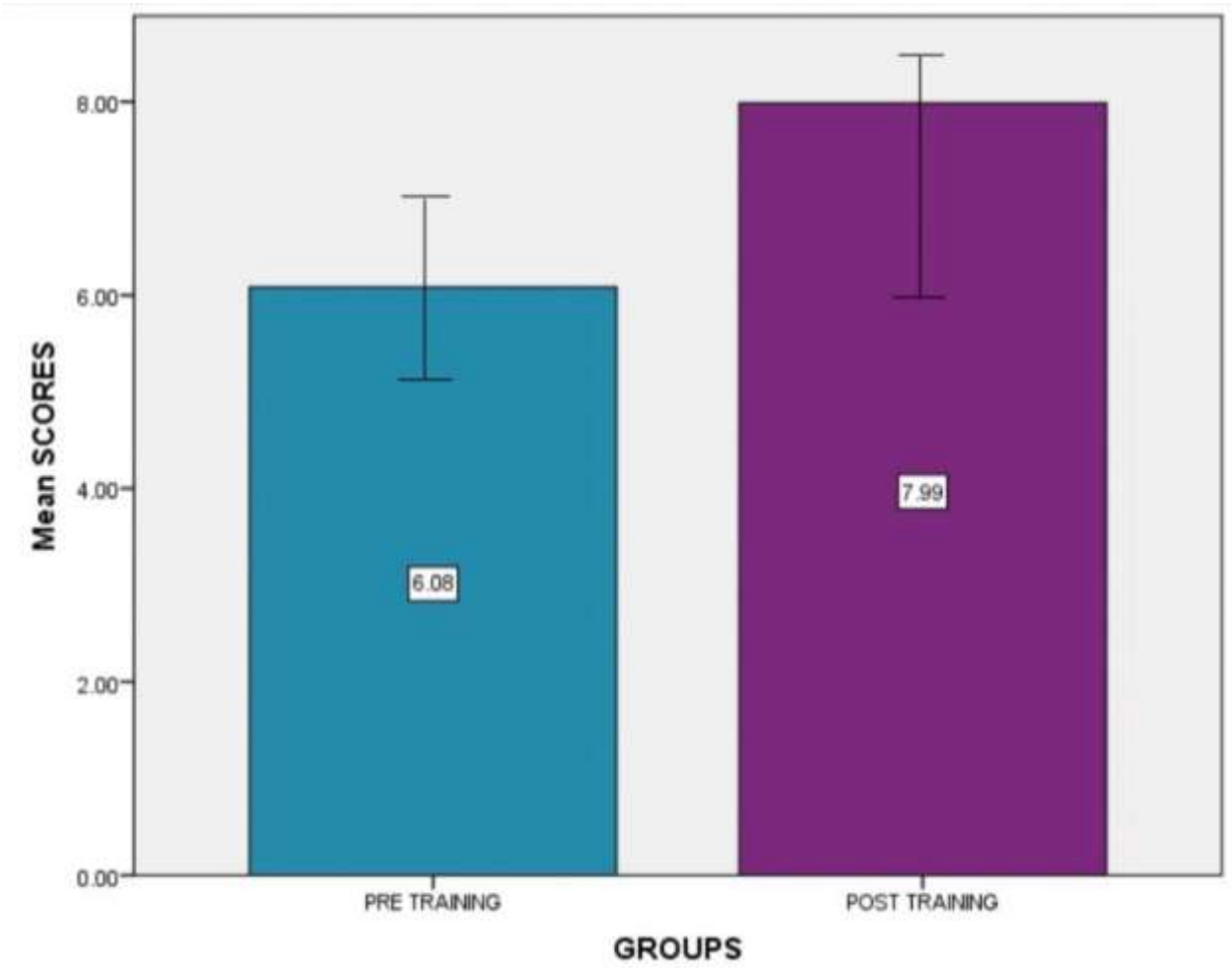

Figure 1. The graph depicts the mean scores of pre-training and post-training analysis. The blue bar represents the pre-training mean score and the violet bar represents the post-training mean score.

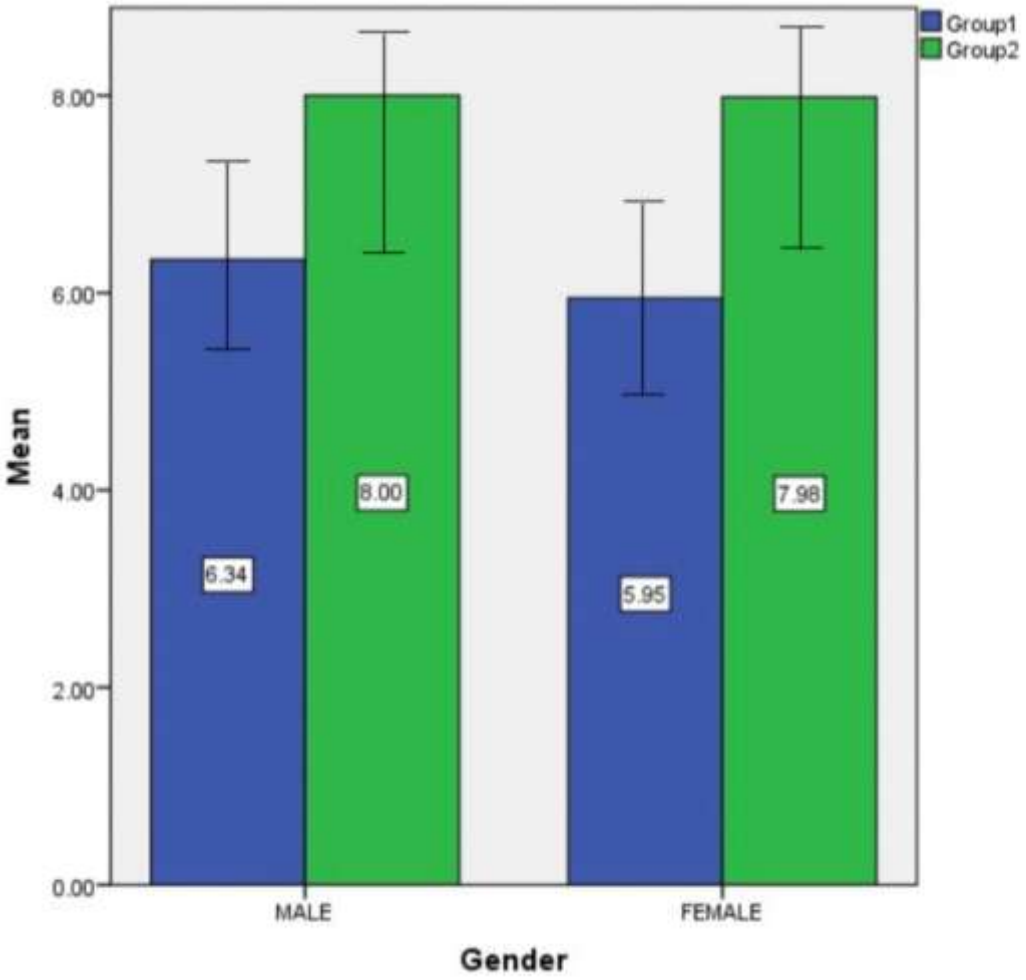

Figure 2. The graph depicts the mean scores of males and females in pre and post-training. The blue bar represents the mean value of pre-training scores of males and females. The green bar represents the mean value of post-training scores of males and females.

4. Discussion

The results were entered into an excel sheet and entered into SPSS software. Paired Sample t-test was done in SPSS and shown in Table 1 and the association graph was created using Chi-square analysis which was shown in Figures 1 and 2.

From the study population of ninety was examined for the understanding of the level of evidence of articles, it was found that the mean value of the pre-training was 6.09 out of 10, and in post-training, the mean score was 7.99 out of 10. In another similar study by Umesh Wadgave, the study demonstrated moderate improvement in the effectiveness of EBP training in improving EBP knowledge, accessing evidence, and critical appraisal skills. In that study, 50 undergraduate students participated and statistically, significant improvement was observed in six out of 10 items related to EBP knowledge. (22)

The standard deviation of pre-training was 1.763 and the standard deviation of post-training was 1.076. It showed that the post-training scores were higher than the pre-training scores among the study population (Figure 1 and Table 1). In a similar kind of study by Clarkson (23), they got similar kinds of results that showed a significant improvement. In a study done by Rosen et al, the authors found that evidence-based dentistry can be involved in the undergraduate curriculum. (24).

When we analyzed the gender comparison, the mean value of the males in pre-training was 6.34, and the mean value of the females in pre-training was 5.95. It was shown that males have more knowledge than females about the study design and article levels for an evidence search. After training the results showed a mean value of 8.00 for males and 7.98 for females. In a similar kind of study by Sara B. Werb, the objective of this project was to identify an effective methodology of approaching and implementing evidence-based principles in undergraduate teaching clinics to promote evidence-based dentistry in future clinical practice. It was a systematic review undertaken to examine evidence-based clinical teaching and faculty continuing education. He concluded that an evidence-based approach to clinical care is effective. (25) A drastic improvement could be

seen in the understanding of study designs and article identification among both the male students and female students after training on the evidence-based search of articles. The mean difference between males and females was 1.66 and 2.03 respectively. Females had shown more improvement than males in our study.

A successful approach for applying concepts of evidence-based medical care would be to use problem-based and evidence-based learning in a classroom setting with a pre-determined teaching scenario. The evidence-based treatment module has been added to the second-year curriculum at our institute as well. However, concerns remain about the appropriate curriculum and methodology for teaching students how to understand and apply EBM in clinical practice.

This training promotes faculty growth while also ensuring that students use evidence-based health care in their regular clinical practice. To validate the results of this study, more similar research on dental undergraduate students from various institutions is needed. Future research should concentrate on evaluating EBP training's long-term effects, as well as comparing traditional EBP training to clinically integrated EBP training.

5. Conclusion

In this study, students scored more after training on levels of articles and about EBD, than what they scored before training. We also found that males showed more understanding of the level of articles than females. Females showed a higher level of improvement on training than males.

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Conflict of Interest

No conflicts of interest in the present study.

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