Research Article

# Structured Quiz for Teaching of CVM Stages to the Undergraduate Orthodontic Students

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## ABSTRACT

**Introduction:** There are several methods of teaching out of which didactic lectures and student centered lecturesa re commonly practiced all over the world in medical and dental schools. The aim of the study was to find out the impact of introducing structured quiz as a method for teaching of cervical vertebral maturation (CVM) stages to the undergraduate orthodontic students.

**Materials & Method:** Current study was conducted on 30 undergraduate orthodontic students of final year. Duration of Study was 2018-19. Initial MCQs test was followed by the lecture and hands-on on quiz pattern and this was followed by the MCQs final-tests. The scores were calculated and presented in form of mean. Student paired t test was applied to compare the initial-test quiz scores with final-test quiz scores.

**Result:** Results showed significant differences between initial-test and final-test which showed a significant improvement.

**Conclusion:** The introduction of structured quiz as a method for teaching of cervical vertebral maturation (CVM) stages resulted in significant improvement in the knowledge of undergraduate orthodontic students.

**Keywords:** Cervical Vertebra Maturation(CVM) Orthodontics, Quiz.

## INTRODUCTION

There are two main methods of orthodontic or any undergraduate dental teaching.[1] The traditional method is to go for didactic lectures; this method is considered to be least interactive and teacher-centric.[2] The other latest method is to go for student-centric teaching with active involvement of students while sessions.[3]

The traditional method which consists of didactic lectures is found to be less interactive; however, it can be modified by inclusion of certain interactive tools. The on such tool is to include structured quiz in lectures to convert the teacher-centric teaching sessions into student-centric teaching sessions.[4-6] It has been found that quizzing is as an effective method of teaching to small group of students.[7]

Cervical vertebral maturation is an important orthodontic topic for teaching to undergraduate dental students. There are several methods of

analyzing cervical vertebral maturation.[8-10] It is usually taught to undergraduate students by lecture sessions, which make its comprehension difficult at the level of undergraduate dental students.

Following this rationale, the aim of present research was to find out the impact of introducing structured quiz as a method for teaching of cervical vertebral maturation stages to the undergraduate orthodontic students. The introduction of structured quiz as a method for teaching of cervical vertebral maturation stages to the undergraduate orthodontic students can make its comprehension easy.

## MATERIALS AND METHOD

This Cross-sectional study was conducted on 30 undergraduate orthodontic students of final year at Dental Section-FMU/PMC, Faisalabad. Duration of study was 2018-2019.

Initial MCQs pre-test was followed by the lecture and hands-on on quiz pattern and this was followed by

the MCQs post-tests. The scores were calculated and presented in form of mean. Student paired t test was applied to compare the pre-test quiz scores with post-test quiz scores.

The quiz consisted of following stages of cervical vertebral maturation[11] (Table 1):

**Table 1: CVM stages**

| No. | Description |
|---|---|
| Stage 1 | Lower borders of C2-C4 are flat. Bodies of C3-C4 are trapezoidal |
| Stage 2 | Lower border of C2 is concave. Bodies of C3-C4 are trapezoidal |
| Stage 3 | Lower borders of C2-C3 are concave. Bodies of C3-C4 are trapezoidal or rectangular horizontal |
| Stage 4 | Lower borders of C2-C4 are concave. Bodies of C3-C4 are rectangular horizontal |
| Stage 5 | Lower borders of C2-C4 are concave. Body of C3 or C4 is square |
| Stage 6 | Lower borders of C2-C4 are concave. Body of C3 or C4 is vertical rectangular |

The scores were calculated and presented in form of mean. Student paired t test was applied to compare the initial-test quiz scores with final-test quiz scores.

## RESULT

Results showed significant differences between initial-test and final-test which showed a significant improvement. (Table 2).

**Table 2: Comparison of initial-test scores versus final-test scores (n=30 BDS students)**

| Initial-Test (Mean ± SD) | Final-Test (Mean ± SD) | P |
|---|---|---|
| 17±13/100 | 76±10/100 | 0.002 |

## DISCUSSION

The aim of present research was to find out the impact of introducing structured quiz as a method for teaching of cervical vertebral maturation stages to the undergraduate orthodontic students. Modification of didactic lectures by structured quizzing is an innovative way of teaching.[4] This modified way of teaching can improve students' knowledge of cervical vertebral maturation stages.[6] This modified way of teaching can also result in improvement of teaching skills.[5]

This cross-sectional study was conducted on 30 undergraduate orthodontic students. Initial MCQs pre-test was followed by the 2 hours lecture and hands-on on quiz pattern and this was followed by the MCQs post-tests. The scores were calculated and presented in form of mean.

The topic of cervical vertebral maturation stages was chosen keeping in mind the importance of it as per BDS curriculum as well as its clinical applicability in orthodontic setups. There are several methods of CVM staging,[12-17] in the present study CVM stages were taught according to the method of Baccetti et al.[11]

Results of the present study showed significant differences between initial-test and final-test which showed a significant improvement. Mean final-test scores increased significantly as compared to initial-test scores. Thus it was found that introduction of structured quiz as a method for teaching of cervical vertebral maturation-CVM stages resulted in significant improvement in the knowledge of undergraduate orthodontic students. Findings of the current study are in line with the findings of Khan et al., who showed that undergraduate BDS students perceived method of quizzing more knowledge full and interactive.[6] Findings of the current study are also in line with the findings of Azeem et al., who showed that undergraduate BDS students perceived method of quizzing more friendly and interactive.[18]

There are several limitations of this study, however, within the limitations of current study it was concluded that introduction of structured quiz as a method for teaching of cervical vertebral maturation-CVM stages resulted in significant improvement in the knowledge of undergraduate orthodontic students.

## CONCLUSION

The introduction of structured quiz as a method for teaching of cervical vertebral maturation (CVM) stages resulted in significant improvement in the knowledge of undergraduate orthodontic students.

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