ORIGINAL ARTICLE

Orthodontic E-Learning for Prediction Tracing of Orthognathic Surgical Cases

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ABSTRACT

Background: The cephalometric prediction of outcome of orthognathic surgical cases is a key step before starting treatment of any such case.
Aim: To find out the effectiveness of e-learning for learning cephalometric prediction of outcome of orthognathic surgical cases.
Methods: The students in group A were requested to do cephalometric prediction tracing by traditional training approach while students in group B were requested to perform cephalometric prediction tracing by E-learning approach.
Results: The outcome prediction tracing skills were evaluated using special checklist. It was concluded that traditional learning method was more effective than E-learning method to enhance the skills of orthodontic students for cephalometric prediction of outcome of orthognathic surgical cases.
Conclusion: Traditional learning method was more effective than E-learning method to enhance the skills of orthodontic students for cephalometric prediction of outcome of orthognathic surgical cases.
Keywords: E-learning; Orthodontics; Prediction tracing; Orthognathic.

INTRODUCTION

Cephalometric prediction tracing has been used to find out the prediction outcome of orthognathic surgical cases[1,2]. This can be used to find out the prediction outcome of surgical cases such as class II or class III single jaw or double jaw orthognathic surgical cases.[3] Cephalometric prediction tracing is not only helpful for orthodontists, oral surgeons and other health professionals but it also help orthognathic patients in decision making[4,5].

Orthodontic E-learning is very helpful nowadays; keeping in mind the fact of faculty shortage at BDS level and postgraduate level in 23 European countries.[6,7] The situation is not much different in Pakistan too where faculty shortage is a problem in many dental colleges of public and private sector.

Data not exists regarding effectiveness of e-learning for learning cephalometric prediction of outcome of orthognathic surgical cases. Therefore, present study was conducted with an aim to find out the effectiveness of e-learning for learning cephalometric prediction of outcome of orthognathic surgical cases. The present study will help in devising the curriculum for orthodontic students.

MATERIAL AND METHODS

The present prospective quasi-experimental study was conducted over 1 year i.e. from 1.1.2018 to 1.1.2019, at orthodontic department of de'Montmorency dental college Lahore, and PMC dental institute FMU Faisalabad, Pakistan, where 40 orthodontic students were trained to do cephalometric prediction tracing of orthognathic surgical cases.

The students (n=20) in group A were requested to do cephalometric prediction tracing by traditional training approach while students (n=20) in group B were requested to perform cephalometric prediction tracing by E-learning approach. The E-learning was adopted using video clips and power point presentations on the topic of do cephalometric prediction tracing of orthognathic cases. The outcome of prediction tracing skills was evaluated using special checklist.
The data were collected and presented in form of mean and standard deviation. The data in both the groups were compared by applying t-test.

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RESULTS

Results showed that traditional learning method was more effective than E-learning method to enhance the skills of orthodontic students for cephalometric prediction of outcome of orthognathic surgical cases (Table 1).

The mean scores of traditional learning group were significantly higher than that of E-learning group which showed that traditional learning method was more effective than E-learning method to enhance the skills of orthodontic students for cephalometric prediction of outcome of orthognathic surgical cases (Table 1).

Table 1: Comparison of Group A vs Group B using t-test. (n=40)

Group A (Mean ± SD)	Group B (Mean ± SD)	P	t
17.56±0.35	12.01±0.67	0.002	2.37

DISCUSSION

The cephalometric prediction of outcome of orthognathic surgical cases is a key step before starting treatment of any such case.[8-11] The present study was conducted with an aim to find out the effectiveness of e-learning for learning cephalometric prediction of outcome of orthognathic surgical cases.

The students (n=20) in group A were requested to do cephalometric prediction tracing by traditional training approach while students (n=20) in group B were requested to perform cephalometric prediction tracing by E-learning approach. The outcome prediction tracing skills were evaluated using special checklist. This is in agreement with previous studies where similar special checklist was used to compare the effectiveness of traditional learning versus E-learning in orthodontics[12,13].

Results showed that the mean scores of traditional learning group were significantly higher than that of E-learning group which showed that traditional learning method was more effective than E-learning method. This is in contrast with previous studies where results showed that E-learning method was more effective than traditional method to enhance the skills of orthodontic students.[12-16] The results are also in contrast with the findings of recently conducted systematic review.[14] The results are different in present study which may be linked to the different orthodontic topics on which studies were conducted. The present study was conducted to find out the effectiveness of e-learning for learning cephalometric prediction of outcome of orthognathic surgical cases. The study by Azeem et al., was conducted on fabrication of surgical splints.[13] The study by Kachoei et al. was conducted on fabrication of Adams clasp and Z-spring fabrication.[12] The study by Lindquist et al. was conducted on fabrication of removable prosthesis[15].

Results showed that traditional learning method was more effective than E-learning method. This is in agreement with findings of study by Schorn-Borgmann et al. who showed that E-learning did not improved in the outcome quality of orthodontic appliances[16].

There are several limitations of this study such as small sample size, experimental design of the study; however, within these, it was found that traditional learning method was more effective than E-learning method to enhance the skills of orthodontic students for cephalometric prediction of outcome of orthognathic surgical cases. Our suggestion is traditional method should be combined with the E-learning method to enhance the skills of orthodontic students for cephalometric prediction of outcome of orthognathic surgical cases. Further studies are suggested with stronger sample size and better designing to find out the effectiveness of e-learning for learning cephalometric prediction of outcome of orthognathic surgical cases.

CONCLUSION

It was concluded that traditional learning method was more effective than E-learning method to enhance the skills of orthodontic students for cephalometric prediction of outcome of orthognathic surgical cases.

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