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**Article received on:**  
04/08/2018  
**Accepted for publication:**  
25/11/2018  
**Received after proof reading:**  
26/03/2019

## INTRODUCTION

The interactive small group discussion sessions are very important in the postgraduate training programs.<sup>1</sup> It imparts necessary knowledge and skills through interactive discussions. Interactive distance learning increase learning satisfaction in residents<sup>2</sup>, but the major hurdle to it is unavailability of the high speed internet connections.<sup>3</sup> There is recent shift from traditional learning to distance interactive learning, and is found to be a effective method for undergraduate and postgraduate teaching.

The distance learning cannot completely replace traditional didactic learning methods but it can be a significant supplement in orthodontic post graduation teaching.<sup>4,5</sup> It exposes residents to different thoughts and ideas, it can increase experience of residents, and it can also compensate for faculty shortage in the institutes.<sup>6</sup> Past studies have shown suggested that, although postgraduate trainees of orthodontics

## DISTANCE LEARNING; INTERACTIVE DISTANCE LEARNING FOR POSTGRADUATE ORTHODONTIC TRAINEES.

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**ABSTRACT... Objectives:** To determine the interest of residents of orthodontics in using distance learning and to determine their perceptions of learning experience. **Study Design:** A Cross-Sectional, Interventional Study. **Period:** From 1.1.2016 to 1.7.2017. **Setting:** Orthodontic department of de'Mont Dental College, Lahore. **Methods:** Present study was conducted on the orthodontic postgraduate trainees. Trainees were asked to read all given research studies before watching a recorded 1 hour interactive seminar. This was followed by participation in a discussion with specialist at the trainees' institute. The trainees then filled questionnaire to measure the interest of postgraduate trainees of orthodontics in using distance learning and to determine their perceptions of learning experience. **Results:** Results of the study showed that trainee's interest and perceptions were generally positive about distance learning experience. Statistically significant differences were found between trainee's interest and perceptions based on how well they were prepared before involvement in this interactive distance learning session. **Conclusion:** The postgraduate trainees of orthodontics perceived distance learning to be effective, enjoyable and learn full.

**Key words:** Learning, Medical Education, Orthodontic, Distance, Residents.

**Article Citation:** Azeem M, Quddoos MU, Ejaz A, Tarique N, Iqbal J, Arfan ul Haq. Distance learning; interactive distance learning for postgraduate orthodontic trainees. Professional Med J 2019; 26(4):679-682.  
**DOI:** 10.29309/TPMJ/2019.26.04.3377

prefer live interactive seminars, they learn almost as much when viewing previously recorded interactive videos of seminars followed by interactive live discussion sessions.<sup>7,8</sup> Thus recorded interactive seminars with follow-up interactive live discussion sessions are also an effective way of distance learning.<sup>7</sup>

Following this rationale, the objective of present study was to determine the interest of postgraduate trainees of orthodontics in using distance learning and to determine their perceptions of learning experience.

## MATERIAL AND METHODS

Present study was conducted on the orthodontic postgraduate trainees at the orthodontic department of de'Montmorency College of Dentistry, Lahore. Duration of study was from 1.1.2016 to 1.7.2017.

Trainees were asked to read all given research

studies before watching a recorded 1 hour interactive seminar. The recorded seminars were taken from the YouTube and were on the topic of biomechanics and orthodontic treatment planning.

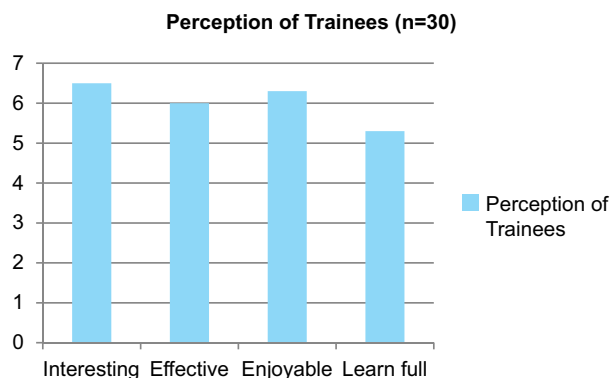
This was followed by participation in a discussion with a supervisor at the trainees' institute. The trainees then filled questionnaire to measure the interest of postgraduate trainees of orthodontics in using distance learning and to determine their perceptions of learning experience.

## RESULTS

Almost 50% (n=30) of the 60 postgraduate trainee of orthodontics were involved in the present study. Postgraduate trainees included first, second, third and final year trainees. Results of the study showed that trainee's interest and perceptions were generally positive about distance learning experience. (Figure-1)

Statistically significant differences were found between trainee's interest and perceptions based on how well they were prepared before involvement in this interactive distance learning session.

Prepared trainees showed an increased ability to learn from the interactive distance learning session than did those who did not read ( $P=0.002$ ). Prepared trainees found interactive distance learning session more effective ( $P=0.003$ ) and enjoyable ( $P=0.001$ ) than did those who did not read.



**Figure-1. Perception of orthodontic trainees about distance learning on 7 point scale (where 1 is disagree and 7 is strongly agree)**

## DISCUSSION

The objective of present study was to determine the interest of postgraduate trainees of orthodontics in using distance learning and to determine their perceptions of learning experience. There are various advantages of interactive distance learning, such as, cost-effectiveness, induce critical thinking in residents, and compensate for faculty shortage in this institute.<sup>9-13</sup>

In the present study residents were asked to read the given content followed by watching a interactive seminar on the topics of biomechanics and orthodontic treatment planning. After all this discussion took place in the department with subject specialist. The trainees then filled questionnaire. The discussion session was conducted in institute without using video-conferencing technology, this is in accordance with the study who found that more evidence is required to find out the worth of video-conferencing over non-video interaction.<sup>8</sup>

Results of the present study found that trainee's interest and perceptions were generally positive about distance learning experience. This is in accordance with the results of studies by Klein et al.,<sup>14</sup> and Bednar et al.<sup>15</sup>

Present study also showed that trainees showed an increased ability to learn from the interactive distance learning and found it more effective and enjoyable than did those who did not read. This is also in accordance with the results of study by Klein et al,<sup>14</sup> who showed that prepared trainees got more knowledge from the interactive distance learning.

There are certain limitations of distance learning, such as, unavailability of high speed internet, lack of resources, time, not work on social skills, lack of teaching skills to run these sessions and no face to face learning environment. Limitation of present study is small sample size. Furthermore discussion session was conducted in institute because of unavailability of video-conferencing technology that allows seminars from locations outside training centers. However, within the limitations of this study it can be suggested that

distance learning and traditional didactic teaching methods supplement each other.

## CONCLUSION

The postgraduate trainees of orthodontics perceived distance learning to be effective, enjoyable and learn full.

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



“

It requires more **courage** to **suffer** than to die.

”

*“Napoleon Bonaparte”*

### AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
1	Muhammad Azeem	Data recording and analysis, Written the manuscript.	
2	M. Umer Quddoos	Written the manuscript.	
3	Anooshay Ejaz	Written the manuscript.	
4	Nadeem Tarique	Study design, Data analysis & Critically reviewed the article.	
5	Javed Iqbal	Written the manuscript.	
6	Arfan ul haq	Critically reviewed the article.	