

## ORIGINAL RESEARCH

# Clinical Orthodontic Photography in Dental Colleges in India – A Questionnaire Study

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### Abstract

A good for dental photography protocol greatly enhances the dental practice. **Aim:** To assess photographic practices in various dental colleges within the India. **Methods:** The questionnaire was created online using "Kwiksurveys" and was emailed to 170 dental colleges registered with Dental Council of India..

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### Introduction

Clinical photography is an essential tool in modern orthodontics. Photographs can be used to aid treatment planning (history taking and diagnosis), evaluation of treatment carried out (tooth movements and mechanics) and also for teaching purposes from formal lectures to simple chair-side patient education. From a medicolegal viewpoint, photographs can be helpful in obtaining informed consent, and provide clear images of baseline presentation as well as treatment progress.<sup>1,2</sup> Maintenance of dental records is legally mandatory in most of the European and American countries. Unfortunately, the law is not very clear in India, and the awareness is very poor.<sup>2,3</sup>

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The Indian Orthodontic Society, has not stipulated any clear guidelines on the use and storage of digital photographs. However, it must be recorded when they are taken and if it is possible to recognise an individual, specific written consent is required.

A suitable camera should be reliable, simple, have a macro lens with consistent

magnification, have a good quality flash and produce good image quality. In recent times professional digital imaging has been proven to be the most acceptable form of image capture due to its many advantages including rapid review of image quality and ease of storage.<sup>4,5</sup>

### Aims

To assess the current clinical Orthodontic photographic practices in India

### Materials and Methods

The study was an email-based questionnaire. The questionnaire was created online using "Kwiksurveys" and was emailed to 170 dental colleges registered with Dental Council of India. All the selected colleges were also sent an invitation with a letter of introduction requesting their participation. The questionnaire consisted of following questions

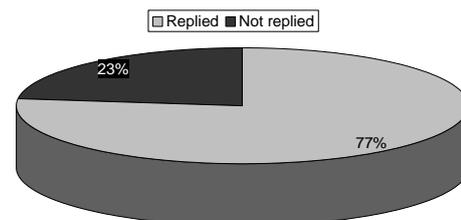
1. Who takes the clinical photographs?
  - Orthodontic Trainees
  - Professional photographer
2. How often photographs are taken?
  - Only pre and post treatment
  - Atleast one stage photographs
  - All stage photographs
3. Why do you take photographs?
  - Evaluate treatment changes
  - Teatment planning
  - Demonstration
  - Publication
4. Whether do you take a separate photographic consent?
  - Yes
  - No
5. In what format images were stored in?
  - Digital(soft copy only)
  - Printed copy only
  - Both prints and soft copy

6. How images were stored and backed up?
  - Hospital Server
  - CD/DVD
  - Hard drive
7. Which cameras were used?
  - DSLR
  - Semi SLR
  - Point and shoot

The responses were later compared to current recommendations and guidelines for clinical photography.<sup>1,2</sup> Data were analyzed using SPSS software (Statistical Product and Service Solutions) version 14.0 provided by IBM Corporation which was used to conduct *post hoc*, analysis of variance (ANOVA), and students t-test.

### Results

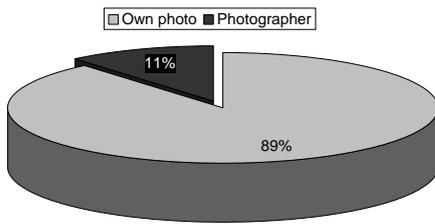
131 out of 170 colleges returned their surveys with the response rate of 77 percent (Graph 1).



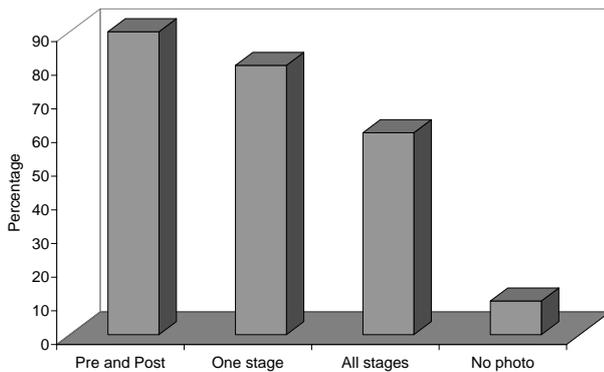
**Graph 1: Response**

### Clinical Photography Survey

In 80% of the orthodontic trainees took their own clinical photographs. However in rest photographs were taken by a professional photographer specialized in taking orthodontic photographs (Graph 2). With regard to the frequency of obtaining images; pre-treatment and post-treatment series were taken by 90%, with 80% taking at least one mid-treatment series and 60% all stage photographs (Graph 3).



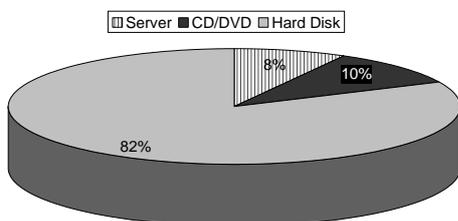
**Graph 2: Who Took Photographs**



**Graph 3: Photographs Taken**

There was universal agreement that photographs were useful in demonstrating potential treatment options and in treatment success (100%). The figure was also high for their potential use in publications (90%). In terms of demonstrations during lectures (70%) and treatment planning (70%).

None of respondents were taking separate photographic consent within their departments. In 90 percent of the departments both digital and print copy was stored. However, in rest 10% only digital copies were stored. Of the records taken only 8% colleges stored digital records on hospital server, 10% on CD/DVD's and 82% on PC hard drives.(Graph 4)



**Graph 4: Data Storage**

Almost all the colleges used DSLR cameras without exception.

**Discussion**

It is reassuring to see that most departments and trainees were taking their own photographs. This helps to maintain the quality/relevance/appropriateness of photographs taken. The frequency was at the very least adequate with most departments taking start, finish and at least one mid-treatment photographic series.

It was disappointing, that clinical photographs were not being used routinely for treatment planning and monitoring treatment progress. In our opinion these images provide a very useful aid to history taking, diagnosis and patient progress particularly in the early stages of orthodontic postgraduate training. The images can be reviewed outside of clinical time and magnified on screen. Many features that could have been missed in the original clinical examination and on a very busy teaching clinic can often be picked up. Together with study models and radiographs, they can assist in the treatment planning process. Serial photographs provide the patient and clinician a guide to treatment progress and allow tooth movements and mechanics to be evaluated. The original malocclusion may be recalled and any changes judged accordingly.

Informed consent is a medico-legal requirement in orthodontics.<sup>2</sup> One survey showed that of the 222 consultant orthodontists held on the database of the British Orthodontic Society, only 41% of clinicians obtained written consent prior to commencing treatment.<sup>6</sup>

Clinical photography can be both an aid to obtaining informed consent and

requires separate written consent itself, especially if an individual may be recognised. The Department of Health further states that it must be explained to the patient why the image is being taken and its intended use. Consequently the finding from this study that only none of the colleges were taking a separate consent for clinical photographs is a concern. form is included in the appendix.

It is encouraging that all the respondents were using digital photography and storing images in this format. It is surprising only 8% had college servers to store images. The hospital server is likely to be the most secure place to store a large number of digital images with the greatest capacity.

All the respondents used DSLR cameras for clinical photography. The cameras most commonly recommended for orthodontic use are Nikon D100, together with the Fuji S1/S2 Pro.<sup>7</sup>

### Conclusions

More consistency is required across the region and the departments should conform to current recommendations.

### Recommendations

- Trainees should at least attend a relevant course, even if they don't have the facilities at their place of training

- Each case should have at least start, mid treatment and finish photos
- Separate consent is required for clinical photographs
- To comply with WHO Medical record manual a guide for developing countries.

### References

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