

ORIGINAL ARTICLE

Knowledge Skill and Attitude among fresh dental graduates about orthodontics

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ABSTRACT

Background: The field of orthodontics is an essential component of the bachelors in dental surgery program. As stated by the American Association of Orthodontics, it is defined as an area of dentistry that deals with the diagnostics, preventions, interceptions and correcting the relationships between mature or developing orofacial structures. This branch of dentistry deals with irregularities of teeth and improper jaw relationships. Malocclusion is known as the improper positioning of teeth when the jaws are closed. The goals of orthodontic therapy are to improve the aesthetics of a person of which a very important component is the smile, obtain the normal or close to normal occlusion, and establish normal oral function. Due to a growing esthetic awareness among the general population orthodontics is gaining popularity as a profession. Hence dentists need to be trained well in this field to cater to the growing needs of the general population.

Aim: The aim of the survey was to find out whether the graduates that are being produced by the dental colleges of Pakistan are knowledgeable and skillful in the field of orthodontics or not.

Methods: It was a quantitative descriptive survey carried out in 2018. The questionnaire was developed with the help of an orthodontic expert following the American, European, Canadian and Australian competencies and piloted before being used for the actual research process. Students who had recently graduated were the target population. Informed consent was obtained from each student before handing them the questionnaire. 33 students in total participated in the study.

Results: 33 surveys were returned. The questionnaire was divided into knowledge, skills and attitude portion. For the knowledge part the majority of graduates felt under confident and were felt they were not well versed theoretically.

In the skills portion the most common answers were either not confident or fairly confident revealing that students again did not have again enough confidence in their skills and the majority had done either very little or no patients in their final year.

For the attitude section the majority of students were not interested in taking orthodontic as their subject of post-graduation since they did not feel very confident about it.

Conclusion: The results of the survey identified the lags in the final year BDS curriculum especially when it came to orthodontics. Serious consideration need to be given to training students in the particular field so the dental graduates are confident and skilled in all fields of dentistry when they pass out.

Keywords: Fresh dental graduate, knowledge, skill, attitude

Introduction: The field of orthodontics is an essential component of the bachelors in dental surgery program everywhere in the world including Pakistan. In Pakistan the BDS is a 4 years' program. Malocclusion has been the second most common complaint of dental patients after dental caries which interferes with facial profile. (Imran, Abdurazaq, & Kumar, 2020) The subject of orthodontics has not received enough attention as other subjects to produce graduates who practice orthodontic diagnosis and management plans. Orthodontics is generally considered as a field for the specialist and students in their undergraduate program are not often trained adequately in the treatment of

moderate to severe malocclusions. (AlShahrani, 2014) A study conducted in the UK found out that Orthodontics was the most popular specialty preferred by the students for their post-graduation training. (Puryer, Kostova, & Kouznetsova, 2016) It was also found out that almost three quarter of the dental schools in the UK considered it unrealistic to expect undergrad students to be able to formulate orthodontic treatment plans. (Rock, O'Brien, & Stephens, 2002)

There is no distinction found between knowledge and skills at the undergraduate level in the list of contents of the national curriculum of Bachelor of Dental Surgery (BDS). (Bashir, Mahboob, Akram, & Saeed, 2016) Orthodontists deal with malocclusion which maybe a result of tooth irregularity or disproportionate jaw relationship. Orthodontist usually improves a patient's facial appearance. In the US, it was found that dental students lacked the skills needed to recognize malocclusion and use dental instruments in diagnosing orthodontic problems. (Bashir et al., 2016)

It is observed that globally the number of general dental practitioner providing orthodontic services has been increasing.

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(Wolsky & McNamara Jr, 1996) Out of the 500 GDPs surveyed in Indiana, 17.9% provided orthodontic treatments. A study by Wolsky and McNamara found that 19.3% of the GDPs who were surveyed in Michigan provided the treatment to ortho patients. (DeLuke, 2005) Konchak and McDermott surveyed that fully banded orthodontic cases were being done by 20 to 34% of the GDPs in Canada. A study by Abdullah M.Aldrees reported only 7.1% of GDP's practicing orthodontics clinically.(Aldrees, Tashkandi, AlWanis, AlSanouni, & Al-Hamlan, 2015) Despite the general dentists limited orthodontic education, limited exposure to orthodontic cases in undergraduate schools, there are certain areas of orthodontic treatments that may fall within the domain of the general dental practice (GDP) . No such research has been done in Pakistan yet.

An accurate understanding of the correct treatment and the right time for referral to the orthodontist by the general dentist is essential for the success of orthodontic treatment. A GDP should be able to provide all sorts of treatment to the patients walking into their clinics and be well aware of the right time to refer them to a specialist.(Acharya, Mishra, Shrestha, & Shah, 2019) With the growing awareness people are now more concerned about their esthetics which makes it even more important for a GDP to have complete knowledge and skills about orthodontics.

Methods: It was a quantitative survey descriptive in nature conducted in June 2018. A well-structured questionnaire that was based on competencies mentioned in the American, European, Canadian and Australian curriculums for their undergraduate program was developed using help from a subject expert. It was then piloted before being used for the actual research process. The survey used both close-ended and open-ended questions.

Ethical approval was given by the University of Lahore. A total

of 40 questionnaires were distributed out of which 33 were returned. Of these graduates 11 were male and 22 were females. The survey was divided into three sections which included questions that analyze the graduates knowledge, skills and attitude towards the level of under graduate training offered at the institute. The questionnaires were

administered personally to all the participants and they were asked to answer all the items. Data were categorized and analyzed by statistical methods using descriptive statistical analysis.

The knowledge section had four questions which were to be answered against a 3 point Likert scale 1 (fairly confident) to 3 (Confident). This section had general questions about the subject to test how much the students know right after graduating. The next section that is the skills section had 13 questions to be answered against a 3 point Likert scale. The third section had 10 yes or no questions except for the last open-ended question exploring how the students felt about their training being done at the institute in the particular subject.

Data was entered and analyzed using SPSS version 21. Frequency and percentage distributions were calculated.

Result: Out of the 33 surveys returned 33% were males and 66% were females. The response rate was 82.5%. The age of the participants was between 23-25 years. 66% of the participants were working at evening clinics and were general dentists.

In the knowledge section the students responded with “fairly confident” (72.7%, 60.6%, 51.5%, 51.5%) as the most common answer meaning that the graduates did not feel confident when asked about their theoretical grip on the subject. Responses to this questions in this section is displayed in Figure 1.

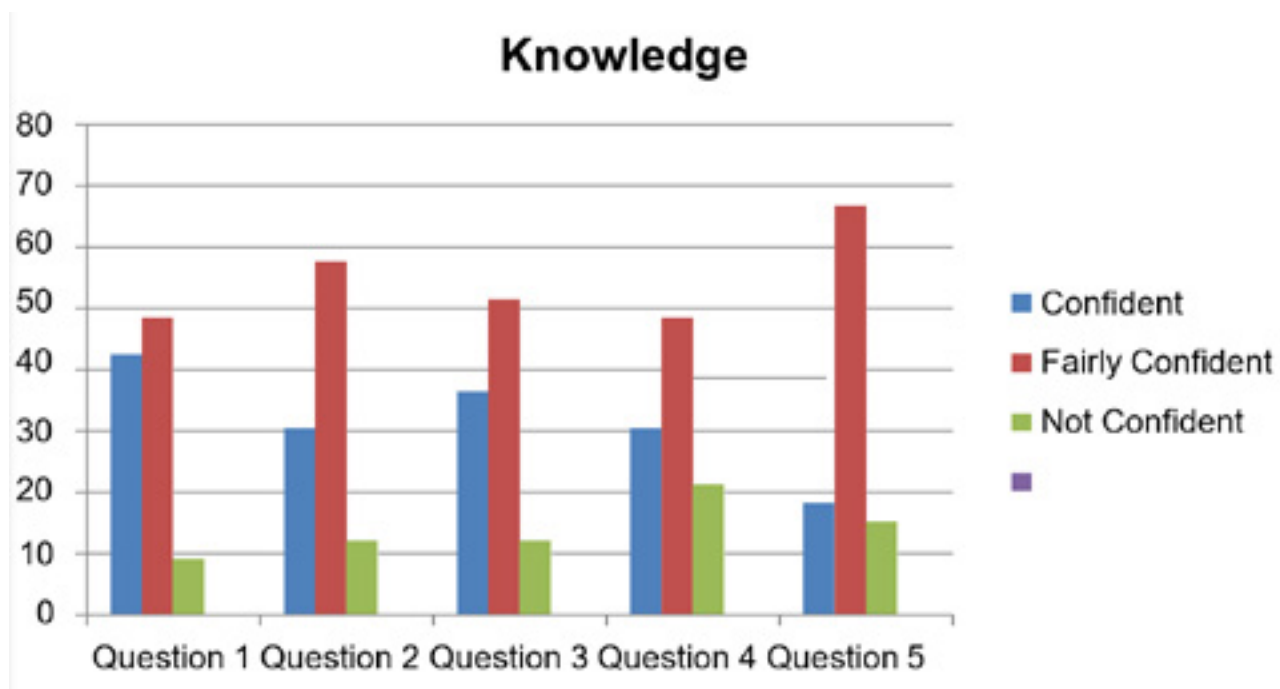


Figure 1 Responses to questions in the knowledge section

In the skills section the first question was about the no. of patients seen or treated by the final year students to which they responded with none or zero as the most common answer. The second most common response to this question was 3 patients. Seven participants did not respond to this question and it may be assumed that it was because they did not observe any patient in their final year. For the rest of the questions participants responded with “fairly confident” this means that they did not have enough confidence in their orthodontic skills to be able to

do cases independently. Except for the last 3 questions which inquired the students about managing minor tooth movement including space maintenance, complex orthodontic problems and designing a dental prosthesis to which the most common answer was

“Not confident” (51.5%, 54.5%, 87.9%). Results of this study are consistent with a study done by P. Fleming (Fleming & Dowling, 2005). Responses to questions in this section is displayed in Figure 2.

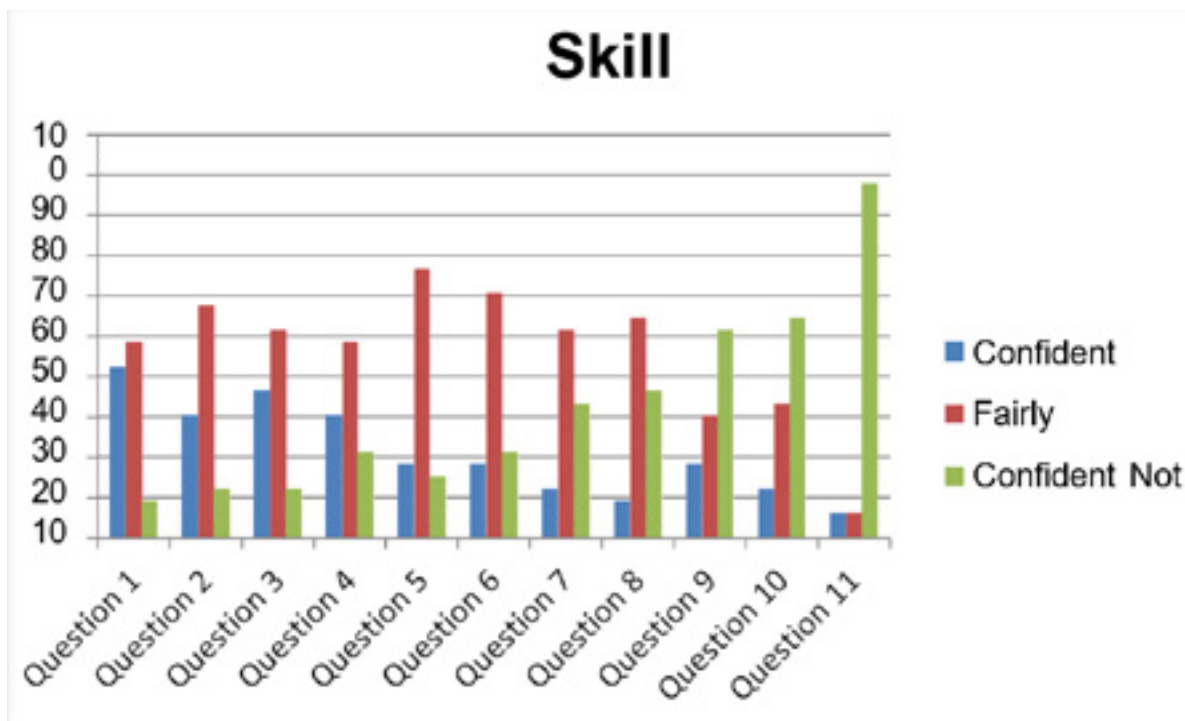


Figure 2 Responses to questions in the skills section

In the attitude part 57.6% of the students said that they did not carry out any diagnostic orthodontic procedure during their final year training. 69.7% of the students said that they had a rough idea about the right time to start orthodontic treatment and were aware of the patients which could be potential candidates for orthodontic treatment. 42.4% of the participants preferred “other specialty practice” as their intended plan whereas 24.2% of graduates seemed interested in doing post-graduation in orthodontics.

Out of thirty-three graduates, 66% of them were working as general dentist in their evening clinics. Eighty eight percent of the graduates were of the view that orthodontic cases should be referred to an orthodontist rather than a general dentist attempting to treat it. Eighty eight percent believed that they could not provide orthodontic services based on their pre-doctoral training alone.

The last question in this part was an open-ended question. Twenty-one graduates out of thirty-three responded. They were not confident at all in treating an orthodontic case without help and guidance.

Discussion: There has been similar research conducted at the Ripah University about the take of faculty members on the contents of the orthodontic curriculum in the undergraduate program. The study revealed that the clinical skills of the undergraduates were a concern for the academicians. Similar research was done in Saudia Arabia which revealed that fresh graduates were moderately competent enough to deal with orthodontic cases and that they should be trained to be able to decide when to refer a case.(AlShahrani, 2014) In Africa a study suggested basic orthodontic knowledge to undergraduate students to stimulate their interest in the field as well as to be aware of the correct timings for referral patients.(Adegbite, Ogunbanjo, Ajisafe, & Adeniyi, 2012) Interesting studies concerning the orthodontic treatment of pediatric patients have been carried out in Iran and Saudia Arabia which again had similar outcomes as previous studies.(Aldreies et al., 2015; Sajadi, Torabi, Poreslami, & Babei, 2016) One study performed in the UK however, had different results showing that undergraduates in the UK were well prepared in the field of orthodontics and felt confident enough to deal orthodontic emergencies.(Jones, Popat, & Johnson, 2016)

Adequate training of the undergraduates particularly in the field of orthodontics and the practice of orthodontics by the general

dental practitioner has been a concern in the dental profession. This survey revealed that the majority of the graduates do not feel confident about treating orthodontic cases on their own. In a survey done in Britain fifty percent of the trainers stated that new graduates were inadequately trained in the field with special regards to removable appliances, fixed appliances and mixed dentition. (Patel, Fox, Grieveson, & Youngson, 2006)

The frequency of the practicing graduates was 22 %. 29% of the total graduates stated that they would prefer to refer orthodontic patients to a specialist rather than treating them at their own clinics. Akshay et al in a survey reported that 38% of GP's perform orthodontic procedures. (Akshay, Anur, Singh, & Singh, 2017) This makes it very important that a general dental practitioner should have enough knowledge and skills about orthodontics that they can confidently treat patients on their own.

It was observed that overall the graduates were not very confident in their knowledge or skills of orthodontics. They did not consider themselves competent enough to practice orthodontics on their own that is without supervision. Since orthodontics is considered a specialty practice the students during their undergraduate training are not given enough exposure to patients during their orthodontic rotation. 54.5% of the graduates had not even done a single patient of orthodontics during their training.

Almost all the students stated that they were not confident in treating an orthodontic case all by themselves that is without guidance or supervision. With one of them stating

“We have only being taught the theory in orthodontics. We are expected to rote learn and pass the exam”

7 out of 21 students who responded to this question believed that they were not given enough patient exposure which leads to them not being confident and that they should have been given more cases during their final year training.

One of the students responded

“Not confident at all. During my final year we hardly observed any patients. I don't know any clinical orthodontics and sadly it is the same during my house job. Nothing clinical/patient care, treatment, management of cases are taught. I only have theoretical knowledge”

Yet another statement by a student was

“We have not been taught any clinical procedure and also we were not allowed to do any procedure on patients. Everything was taught but it was all theoretical. Even in house-job we are given patients for scaling and changing ligatures only. We were taught more than that. Clinical knowledge is useless without practicing it”

Conclusion: The present study reveals that undergraduate students are not confident when dealing with orthodontic cases without the guidance of a supervisor or a senior at their private clinics which is due to a lack of hands-on training on orthodontic patients during their final year. Therefore, it can be concluded that the dental schools in Pakistan do not prepare students

enough in the field of orthodontics and hence the curriculum of dentistry should be revised and orthodontics be made an important part of it.

Recommendation: The study reveals the gaps in the orthodontic curriculum which need to be filled with further research in the area and the curriculum revised to provide better training to the under graduates in the future. Also students should be given enough patient exposure during their undergraduate training to polish their skills and make them feel confident enough as they feel in other subjects. This has been suggested previously by a study done in Nepal (Kapoor, Bhatia, & Garg, 2018). The study shows that among knowledge skills and attitude the skills are the lacking element in the undergraduate training and it should be worked upon.

Limitations: The limitation of the study was the small sample size and that it was conducted in one private dental college in Pakistan which cannot give a clear picture of the overall situation.

Note on Contributors:

- Shan E Zohra: Main author, conception and design of the work, acquisition, analysis and interpretation of the data
- Muhammad Haider Amin Malik: Collection of data and revising the work critically for important intellectual content

Declaration of Interest: The authors report no declaration of interest.

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