

## Orthodontic Postgraduates Satisfactions and Expectations: A Qualitative Study

Alizae Marny Fadzlin Syed Mohamed<sup>1\*</sup>, Balqis Zulkiflie<sup>2</sup>, Tanti Irawati Rosli<sup>3</sup>

1. Discipline of Orthodontics, Department of Family Oral Health, Faculty of Dentistry, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia.
2. Chini Dental Clinic, Pusat Kesihatan Chini, Pekan, Pahang, Malaysia.
3. Discipline of Dental Public Health, Department of Family Oral Health, Faculty of Dentistry, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia.

### Abstract

Postgraduate orthodontic education is very challenging. Evaluation of the postgraduate experience and feedback on the orthodontic education they received during their training years is essential to improve the quality of education available. In this study, we aimed to investigate the experience of orthodontic postgraduate students with their programmes and determine the scope of their training.

A one-to-one interview was performed with nine students covering a selected topic that has been determined before the interview. The recorded interview was transcribed and categorized by different themes; overall satisfaction with the programme, scope of educational training, clinical experiences concerning the treatment of patients, and professional behavioural intentions in the student's career pathways.

The responses reflected students' responses to questions asked about curriculum and overall satisfaction with the orthodontic programme. They indicated that they received a sufficient amount of formal didactic teaching and clinical sessions with research-based training. Some issues with teaching and learning including programme organization, facilities, clinical support staff, treatment techniques, and curriculum were highlighted.

In general, students were satisfied with the programme and suggested improvements on the library resources, financial and clinical assistance.

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### Introduction

Currently, three major training centres are offering postgraduate orthodontics education in Malaysia, for the length of four years with clinical and research studies. This is parallel with the qualification requirement by the Malaysian Qualifications Agency (MQA) and the Ministry of Higher Education (MOHE). This orthodontic programme is to educate dentists to become orthodontists with a solid theoretical and scientific background also adequate clinical experience in orthodontic treatment. Emphasis is placed on developing scientific thinking skills needed for long-life learning and problem solving through a

variety of clinical orthodontics cases and a compulsory research component.

Orthodontics education involves the active involvement of the learners. This is a process of engaging with the learning task at both the cognitive and affective level, in an attempt to foster and develop learning skills for life. This will encourage the students to find information independently, share it within the group, and select the information that can be used to solve the clinical problems. These require a deep level of processing that enhances knowledge to be retained in a long term.<sup>1,2</sup>

An orthodontic programme needs to cope with the challenges to address the implications of such changes for the student learning experience with the development of a competent, knowledgeable, and competitive human capital. They have to overcome the challenges of enhancing their relevant clinical knowledge and skills to higher levels that adapt along with the discoveries in biology and the innovations in technology.<sup>3</sup>

#### \*Corresponding author:

Assoc. Prof. Dr. Alizae Marny Fadzlin Syed Mohamed, Discipline of Orthodontics, Department of Family Oral Health, Faculty of Dentistry, Universiti Kebangsaan Malaysia, Jalan Raja Muda Abd Aziz 50300 Kuala Lumpur, Malaysia. E-mail: [alizaemarny@ukm.edu.my](mailto:alizaemarny@ukm.edu.my)

Particularly, the quantitative studies enable the identification of strengths and weaknesses in the programme, gathering information on clinical and didactic curriculum, and establishing a basis for comparing changes in the programme over time.<sup>1,4,5</sup> There is lack of study in term of qualitative study, that has several important advantages. Postgraduate students will be able to comment and express their perspectives and feelings in-depth about what they have experienced. The level of satisfaction and whether the aspiration is met or not have been accounted for. This will enhance and improve data accuracy because it reduces retrospective accounts and recall bias.

The purpose of this study is to qualitatively explore and analyze the postgraduate students' experiences on the satisfactions and expectations of the orthodontic programme.

### **Materials and methods**

This qualitative study was approved by the Institutional Review Board (IRB) of the Universiti Kebangsaan Malaysia (UKM) Research and Ethics Committee (UKM 1.5.3.5/244/DD/2014/006). This study was a cross-sectional design and all participants were treated according to the principles of the Declaration of Helsinki.

The orthodontic postgraduate students of the UKM were invited using the principles of purposive sampling of two batches from the same cohort of curriculum, to gather a range of experiences in terms of the four years duration of the programme. Thus, the participants included all final-year postgraduate students. Nine students (all females) were recruited, with a mean age of 25.2 (SD 0.7) years. They were informed about the study details and given assurance about anonymity and confidentiality.

The one-to-one interview was conducted, with no time constraints, in a non-clinical setting to ensure privacy and a relaxing situation. Interviews were based on a topic guide, which helps to define available areas to be explored concerning the research objectives. This approach is considered appropriate and provides them with some guidance on what to talk about. Fair dealing was achieved by interviewers (TIR, BZ) that were not involved directly with the students. Reflexivity might have not been

influenced by the personal and/or intellectual bias of the students. Furthermore, it allows divergence and follow-up questioning, whereby new information is raised by the student, in turn, to be included in future programme planning.

The topic guide would generate constructive data by examining and comparing emerging themes from the interviews in terms of their consistency and frequency. The interviewers were familiar with the structure of the programme and the issues involved may not be perceived as bias or threatening by the interviewers. All interviews were conducted and recorded.

Findings from the interviews were transcribed, analysed, coded, and compared with NVivo software, during data collection, and on completion. Data analysis adopted the principles of framework analysis, in which the information and themes derived from the analysis were independently coded (AMM). The resultant coded category system proposed was similar and, following discussion, four main themes were identified: satisfaction with the programme, scope of educational training, clinical experiences concerning the treatment of patients, and professional behavioural intentions in the future. This permitted further exploration of each theme in terms of its frequency of occurrence and severity of effect, providing greater insight into the programme. Follow-up of this nature may be helpful to build upon the strengths and address the perceived weaknesses of this programme.

### **Results**

Four main themes with several sub-themes were introduced, based on information generated from the interviews.

#### **Overall satisfaction with the programme**

The students conveyed a positive image of the programme. Most of these comments reflected the excitement and benefits of orthodontics training at the prospect to be trained as an orthodontist. Feedback on programme generally leads to comparisons with orthodontic programmes from other universities. This can be divided into several major issues (Table 1).

**1. Orthodontics training**

"Generally, I'm happy with the programme, especially with the conjoint programme, it benefits us a lot. In terms of not having to go abroad to sit for the international exams. It's a great deal for us"

"I am satisfied with the curriculum. The curriculum meets the requirements for orthodontics. Timetable has been arranged properly, we have our learning schedules, clinical sessions, courses, clinical attachments, and especially exams dates. We can plan and prepare for the scheduled activities."

"I think it's a very good programme. It's very comprehensive and well organized. All lectures that we have, are very good. It is relevant for the training. I think the lecturers are also very proactive in helping us so that we can gain the most for our practice in the future."

**2. Comparisons with other programme/universities**

**a. Programme structure**

"In Tokyo, they have seminars where they presented their cases to the whole class. Everyone will have an overview of the case. Here, we have a diagnostic and treatment plan presentation during the clinical session only to the supervisor, together with the patient on the chair. At the same time, the supervisor also supervises the other students. The discussion will be limited by the time slot available."

"We were given a take-home assignment of an essay topics every month. I would prefer it if it can be arranged as an examination orientation for an hour. This will enhance us to memorise those topics."

"In Australia, their programme is only 3 years and they don't have basic science course in their curriculum."

**b. Financial**

"The students in other universities are quite lucky. They have all the clinical attachment fees included in their programme fees. They went for the attachment for almost 2 months."

"I can claim the conference fees from my employer, but in a limited amount. I am aware that we have the lowest tuition fee compared to others. Their fees are more expensive, that's why they are being sponsored to attend the conference."

**c. Lecturer**

"Once we share information about learning experiences with other universities, they informed that their lecturers provide coaching classes even during the weekends. I do hope our lecturers are more approachable after office hours."

"We are taken care of by our lecturers. In other places sometimes they just leave you independently without proper guidance."

**d. Clinical support staff**

"It is better to have one clinical assistant to one clinician. Actually, at other universities, they don't have that privilege."

"We do have enough assistants. Even, during our visit to Tokyo, they didn't have a dental assistant. They only have runners, there are three of them for the whole clinics."

**e. Library**

"It is difficult to access the full-text of the journal. We have this problem since the beginning of our study."

"There is limited access to the journal. I will ask the librarians to get the material from their sources. After a few days, they will notify me via email."

**Table 1.** Overall satisfaction with the programme.

**Scope of educational training**

The scope covers comprehensive training across a range of orthodontic-related topics for the students to foster understanding and promote the importance of competency during clinical practice (Table 2).

**Understanding and importance of competency**

"We will be able to apply whatever we have gained during the programme to become a future orthodontist."

"Starting year 2, it is more focused on clinical, research, and even assignments."

**Point of lacking**

"Maybe we should have exposure to one project of clinical audit in orthodontics."

"I think we should be trained earlier in communication for the final exam."

"We are mature students. For some topics, we should have more discussions and repeat them several times. Probably, we should be exposed to other available systems such as Roth, lingual, etc. We will gain more on the application of those systems during clinical use."

**Table 2.** Scope of educational training.

**Clinical experiences concerning the treatment of patients.**

Generally, the students provide their experience with the type of cases that they have or haven't been treated during the clinical sessions. Some information was identified which

include a need to have a good assistant. Frustration towards negative attitudes of assistants was also highlighted (Table 3).

**Clinical cases**

"I am very fortunate to have enough numbers of the patient, variation of cases, and multidisciplinary involvement. We even had a joint clinic with the General Hospital."

"I have a good range of patients with a mixture of adult and adolescent."

"I only have one orthognathic case and this is inadequate. If I have more multidisciplinary cases, it will provide me with more experience in managing those cases. Even though I am involved with lots of cleft cases, I still need more guidance. I have no problem managing patients with restorative and periodontic problems. We always discuss the management of those cases, but the best is still to have our own experience."

"I have the opportunity to treat a patient with expansion, cleft, and orthognathic. However, I didn't manage to get experience for the impacted canine."

**Information identified**

"I do not think we have problems in terms of clinical assistant numbers. it's just about their attitude. I have experienced with an assistant, who only choose to do the certain clinical procedure. I am even more disappointed when I saw her just talking and wandering around. I would understand if she needs to do other clinical work."

"There are technicians who adhere to the requested date of the appliance or even earlier. For some of them, we still need to contact and remind them. If not, the appliance will not be delivered on time."

"The attendants are very helpful. They help us to get the models and appliances from the lab. Even the patient folders from the registration counter."

"There is a constant rotation of dental assistants either for every six months or once a year. I will be assisted by the trainee if the assistant is not enough. I have to train them as some of them are lack clinical orthodontic experience. Some of them is a quick learner but some are a bit slow."

**Table 3.** Clinical experiences concerning the treatment of patients.

**Profesional behavioural intentions in the student's career pathways**

The expectations expressed indicated that the decisions made will be based on the future working environment (Table 4).

"I will work as a lecturer at one of the universities in my hometown. I may think to pursue Ph.D., but I may just quit my job and work in private practice. I am the type of person that doesn't like to stay in one place for a long time."

"If I have a chance I want to focus on one particular area in orthodontics. There are clefts, aesthetics, and others. I'm interested in working with a cleft unit."

"I'm not good at teaching. I also do not see myself going to do any subspecialty later."

**Table 4.** Profesional behavioural intentions in the student's career pathways.

**Discussion**

Studies have identified job satisfaction, lifestyle, improved opportunity to provide interdisciplinary treatment to patients, and a good career as important variables when choosing an orthodontics programme.<sup>6-8</sup> This highlights the importance of perceived experience and knowledge of students for future planning and improvement of orthodontic curriculum.

As the faculty has been recognised as a training centre for Orthodontics by the Royal College of Surgeons of Edinburgh (RCS Edin), United Kingdom, the requirements for eligibility to enroll for the Membership in Orthodontics RCSEdin examinations are fulfilled. The final

examination structure is conjoint and integrated, where the students sit for two parallel examinations. The students acknowledged the opportunity for international qualifications without having to sit for the exam abroad.

The present study provides valuable information about how the students differentiate their programme from the orthodontic programme from other universities. They even compared with other specialties programme within the faculty. The duration of orthodontic programmes has increased over the same period in other countries.<sup>1,5</sup> Study reported a two-year programme adequately prepares them for private practice. However, most of the postgraduate students are dental officers from the government sector and they will not be going to private practice for the next seven years after their graduation.

Since 1998 Malaysian orthodontic programmes have been structured for four years following the MQA. At the faculty, the postgraduate programme has been structured as the first six months for the basic medical/dental sciences, followed by three and a half years for the specialty training. Basic sciences course has its precious value in terms of principles, concepts, theories, ethics, and others. Applied science is concerned with transferring the available knowledge into practical applications in terms of production, solving existing problems, and optimizing the selection of materials and methods. Being in the practice for some time, this first semester helps the students to refresh and regain all the knowledge again.

Most students felt that the programmes offered an organized time for formal didactic sessions as well as protected time for research. Yet, some students felt that there was not enough time for formal educational activities. Lecturers in other universities were noted to find additional time within the programme for educational sessions, which may include evenings and weekends. It is common to arrange an additional time for discussion or learning sessions. It is well known that the academician works more hours per week, however, income per hour for full-time faculty lecturer was less than one-third that of their private practice colleagues. In addition, they were perceived to experience more stress, encountered more bureaucracy, and received less respect.<sup>9,10</sup>

Supervision and chairside teaching are

essential components in the work-based contextual learning cycle for clinical students.<sup>11</sup> The students are encouraged to use their knowledge of orthodontics to reflect on the clinical problem and then suggest appropriate management during the clinical session. Communication and collaboration with a team including other dental specialties are fundamental for the treatment of adult patients, patients with temporomandibular dysfunctions, orthognathic surgery patients, and medically compromised patients. The postgraduate students indicated that they collaborated most frequently with oral surgeons, followed by periodontists and prosthodontists.

A continuing increase in tuition fees was reported, along with increased levels of debt at graduation, and fewer students intend to have an academic career.<sup>12</sup> The Malaysian government is mainly responsible for financing the students' education of the programme. Although some of the students were aware that their programme fees were the cheapest compare to the other universities, they expressed dissatisfaction with the extra money that they need to spend to attend courses, conferences, and clinical attachment. They were aware that the other universities have some allocation for those events though not entirely covered. In addition, the fees for the conjoint examination were not included in the programme fees as it is an isolated arrangement through the Memorandum of Agreement (MoA). Terms and conditions of the memorandum are subjected to changes for any improvement and amendment.

Each of the students has sponsorship for their tuition fees and provides them with a monthly salary. Later during the programme, a certain amount of money was allocated by the university for the activities except examination, but subjected to terms and approval. Still, with some dissatisfaction, the students suggested that the university should officially include all expenses into tuition fees that will be incurred by their sponsors.

Electronic resources have exploded in popularity and use that include increasingly computer-literate students and keeping up to date in orthodontic fields. The latter is essential with clinical practice as more of the patients use the Web to keep informed about health information. Both students and faculty members often prefer access to databases of online-



refereed journals and the Web.<sup>2</sup> This will provide information that is up to the minute, easier to access and search, and also global in scope. However, funding is always a challenge because the need for content, books, journals, and so on is insatiable.<sup>8</sup> The isolation of dental schools within the university has left them without support from this potential constituency. The total number of dental faculty members and students is less than the number of other faculty members. This led to a lower percentage of e-resources used and accessed compare to the entire faculty members of the university.<sup>13</sup> To overcome this, the library encourages the students to reserve the unavailable titles and they will purchase a copy of the reference.

The programme includes combined clinical seminars and case presentations. Case presentation learning makes use of guided inquiry and discussions on a real case and is typically employed during small-group educational sessions.<sup>2,14</sup> The students may be benefited because exposure may also assist them in efficiently structuring clinical case organizations that they are not familiar with. This experience would lead to the formation of ideas or concepts to solve problems and retain the knowledge better which will result in the assimilation of a new experience. The main concept in clinical training is the need to focus on imparting learning skills with more confidence and enhanced diagnostic and clinical abilities, rather than learning facts.<sup>15</sup>

Postgraduate students are generally more mature and they are assumed to be more motivated. Their number generally is smaller and teaching is usually in a small group or one-to-one teaching, often in a seminar or group discussion. The study had revealed that the majority of orthodontic postgraduate students are visual learners who showed a preference for sensing and sequential learning styles, though many were balanced between active and reflective learning.<sup>2</sup> In this study, the students still feel that they need to learn and be taught traditionally. No doubt that there is a little adjustment in such a transition as postgraduate students.<sup>16</sup> It is a challenge to encourage changes in learning cultures from traditional learning methods to independent learning through the transfer of information and active skills that promote independent learning. Changes to active learning are inevitable as it is a major component of

higher education for adults. Constantly, the faculty members encourage students to become an expert learners. Independently, the postgraduate students should assess how the learning activity is helping them to gain understanding and fit new information together with what they already know.<sup>2</sup>

The students receive comprehensive training with the opportunity to start and complete a significant number of patients using different treatment approaches and philosophies.<sup>17</sup> Although the key parameters in a programme may be the number and variety of malocclusions treated or the multidisciplinary cases, the number of clinical hours and seminars, the treatment modalities, and patient's age, but these entities may not correspond to the quality of training provided.<sup>18</sup> The total clinical exposure to specific cases may limit students' clinical knowledge, ability, and expertise at the time of graduation. The students were involved in patient contact for a minimum of six clinical sessions per week. Out of these sessions, at least five sessions involve direct treatment of patients under the supervision of a consultant orthodontist. Moreover, to equip trainees with adequate skills and competencies, a total of 80-120 patients would be the appropriate caseload. Although the students were given adequate numbers of patients, the final active patients and variation of malocclusion were still limited. A limited number of active patients may be affected by poor attendance, inadequate oral hygiene, breakage appliance, and others.<sup>19,20</sup> As the students provide care under supervision, the clinical time per patient would be affected.<sup>21</sup>

One student expressed repetitive inappropriate behaviour that adversely affects the effective functioning of clinical procedure, other staff and teams is considered unprofessional. This concept exposed the students to aspects of practice that are not usually taught at the theoretical level. It requires a full understanding of each individual's roles and these include the effective handling of organizational aspects of practice which is managing the human behavior in clinical governance. Gradually, the increased role played by the assistants became a recognized necessity.<sup>22</sup> The faculty only employed assistants with formal and qualified general dental training. Generally, the role of assistant involves the chairside work constantly with the student in performing the technical

procedure in the orthodontic set-up which is known as the four-handed dentistry to maintain comfort throughout the working hours.<sup>23</sup> They work on a rotation basis with specific delegation tasks allocation to accommodate the limited number of the assistants.

Dental technicians that are specialised in orthodontic appliances have extremely delicate work and time-consuming. The need for effective communication between students/clinicians and dental technicians seems unquestionable. This is made even more important by the development of new and updated techniques and materials for patient treatment and appliance construction. Although emphasizing clear and effective communication about the appliance design, sometimes quality is not always adequate which can lead to errors in the fabrication of the orthodontic appliance.<sup>24</sup>

Orthodontics is the most popular postgraduate dental specialty programme. In terms of plans after graduation, most of the students plan to engage in government service due to their scholarship bond for seven years. Most of them planned to explore private practice once their bond ends.<sup>6</sup> Some of them shows interest in academic careers.<sup>25</sup> Nevertheless, the crisis in recruitment and retention of academicians in orthodontics has been well documented.<sup>9,10,26-28</sup> The orthodontic community must provide supporting evidence that there will continue to be a shortage of persons interested in pursuing academic careers.<sup>28,29</sup>

Findings from the present qualitative study revealed what students have experienced during the programme. It should not be underestimated as these inputs appear to have potential benefits and facilitate continuous improvements. Principles of the training philosophy have spread over the structure of postgraduate training. Apart from exchanging clinical experience, effective handling of organizational aspects of practice, such as logistics of materials and utilities, but most importantly, this system also provides fundamentals—management of the finances of clinical orthodontics. This situation may need to be addressed to ensure continued development and strength of orthodontic programmes and specialty as a whole. This study offers a resource of data covering many aspects of orthodontic graduate programmes that might be helpful for both potential students and current faculty

members.

Concerning the qualitative approach adopted in this study, there are some limitations. The results may have been influenced by the one-to-one contact between the student and the researchers. Only one researcher independently established the themes before reaching a consensus on the final themes, which may not enhance the reliability of the results. The study questions also were piloted locally. This survey did not evaluate the students' perceptions of assessments and examinations in detail. In addition, clinical and academic supervisors were not assessed. These factors may need to be further explored.

## Conclusions

The present study identified factors that influence the running of the postgraduate orthodontic programme. Overall, this study revealed the need for improvement in certain areas relating to the programme. The students' responses were less positive towards the delivery mode of teaching, the value for money represented through the course, and their perception of fairness.

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## Declaration of Interest

The authors declare no conflict of interest.

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