

# Paediatric dentistry trainee views on training relating to the medically compromised child and oral medicine elements of specialty training curricula

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## Abstract

**Introduction:** Paediatric dentists care for children who are medically compromised and with an orofacial disease; therefore, trainees need appropriate training in these areas. The prevalence of congenital and chronic diseases in children is increasing, and future specialists need an understanding of human health and disease and oral medicine. This study aimed to determine if current teaching and assessments were fulfilling these requirements.

**Materials and Methods:** A survey distributed to the UK and Ireland specialty trainees asked their opinions on whether knowledge gained prior to entering training, and teaching and learning during training equipped them for future management of medically compromised children and those with oral medicine diagnoses.

**Results:** The response rate was 51% (26 trainees). Most were aware of curriculum elements for medically compromised children and oral medicine. The majority felt that knowledge and experience gained as undergraduates and early graduates was insufficient and recognised the need for these topics in speciality training. For medically compromised children, this learning was considered a good use of time by 96% of trainees, and 88% felt that this topic should be given more attention. For oral medicine, this learning was considered a good use of time by 96% of trainees, and 69% felt that this topic should have more attention.

**Conclusion:** Paediatric dentistry specialty trainees recognise that knowledge and experience of managing patients considered medically compromised and those with oral medicine conditions are an important part of training and need greater emphasis, especially in light of changing demographics with congenital and acquired chronic disease, and children with oral medicine disorders.

## KEYWORDS

medically compromised, oral medicine, paediatric dentistry, specialty training

## 1 | INTRODUCTION

Paediatric dentistry is defined by the United Kingdom (UK) General Dental Council (GDC) specialty training curriculum as "The practice and teaching of, and research into the comprehensive therapeutic oral health care for children from birth through adolescence, including care for those with who demonstrate intellectual, medical, physical, psychological and/or emotional problems."<sup>1</sup> In adult dentistry, patients with such needs may be seen by specialists in special care dentistry, and those with oral manifestations of systemic disease or other orofacial diseases, are seen by specialists in oral medicine (OM). In paediatric dentistry, *all* patients up to the age of 18 may be seen by paediatric dentists who should have an underlying core of knowledge relating to medicine, medical problems and oral medicine. This is reflected in the GDC curriculum for specialty training in paediatric dentistry.<sup>1</sup> In the GDC curriculum, standard 2.2, section 3 describes the knowledge, skills and attitudes for specialty trainees relating to medically compromised patients, and standard 2.2, section 7 describes similar in relation to OM. In the UK, trainees who have completed specialty registrar (StR) training in paediatric dentistry and have been awarded a certificate of completion of specialty training (CCST) may register as a specialist with the GDC. There is an additional period of training (post-CCST) which specialists may choose to undertake, to equip them with additional knowledge and skills appropriate for appointment as a consultant in paediatric dentistry, typically for those working in specialist paediatric dentistry units in university dental hospitals. The curriculum for this was established by the Specialist Advisory Committee (SAC) for paediatric dentistry, organised by the dental faculties of the UK and Ireland surgical Royal Colleges.<sup>2</sup> This curriculum also has sections related to OM and medically compromised children (MCC). In Ireland, paediatric dentistry is not a recognised specialty (unlike oral surgery and orthodontics), but training centres and trainees tend to follow the UK GDC curriculum and sit Tri-Collegiate speciality membership and fellowship examinations organised by UK and Ireland Royal Colleges' faculties of dental surgery.<sup>3,4</sup>

As long ago as 2005 a paper in the *British Medical Journal*<sup>5</sup> reported,

For adolescents (defined by the World Health Organisation as 10-20 years of age), key public health indicators in priority areas such as obesity, smoking, sexually transmitted infections, and teenage pregnancy, have shown adverse trends or no change in the past 20 years, and At the same time, the prevalence of common long term illnesses such as asthma and diabetes has increased, and advances in the treatment of congenital conditions have resulted in new cohorts with diseases largely unknown to adult physicians.

Therefore, a solid core of knowledge, training and experience in identifying and managing MCC and those with medically related orofacial diseases/OM conditions underpins safe and effective practice

in paediatric dentistry. These aims are shared elsewhere in the world, for example, the European Academy of Paediatric Dentistry (EAPD) has curriculum guidelines that include sections on MCC and oral medicine,<sup>6</sup> and the American Board of Paediatric Dentistry (ABPD) includes sections in its assessment blueprint on children with special healthcare needs (MCC) and OM.<sup>7</sup>

We wished to identify whether UK and Ireland specialty trainees in paediatric dentistry, in both pre- and post-CCST training, felt that their curriculum-directed training continued to build on earlier teaching and learning obtained at dental core training and undergraduate level, equipping them with appropriate knowledge and skills regarding MCC and in OM. If there were any themes identifying gaps in knowledge or training in the trainees' responses, then targeted training may be appropriate for some, and a change in emphasis may be included in future revisions of the GDC and SAC curricula.<sup>8</sup> Dentists entering into specialty training in paediatric dentistry will, after initial dental qualification typically have completed the first year in dental foundation training (DFT), followed by periods in hospital working as a dental core trainee (DCT) or senior house officer (SHO). The DCT curriculum references knowledge in relation to common medical conditions, including mental health issues, and common OM conditions.<sup>9</sup>

The specialty training curriculum for paediatric dentistry suggests teaching and learning methods (e.g. case-based learning [CBL], clinical attachment [CA], structured teaching [ST]) as well as different types of assessment methods which may be used to evidence completion of elements of the curriculum (e.g. workplace-based assessments [WBA], personal development portfolio [PDP], 360-degree appraisal [360°]), for uploading to "Intercollegiate Surgical Curriculum Programme" (ISCP) - an online curriculum portfolio tool, which can be viewed at any time during training, and at the annual review of competence progression (ARCP).

Trainees were asked about their awareness of teaching and learning methods and use of WBAs and their completion to demonstrate progress in the two areas under review. Using Likert-type questions,<sup>10</sup> we also asked trainees if they felt their undergraduate and foundation training, dental core training and especially their paediatric specialty training had equipped them with appropriate medical knowledge as well as knowledge and skills in OM to allow them to successfully complete specialty registrar (StR) and post-CCST training and assessments.

Additional Likert scale questions asked whether trainees felt teaching and training in aspects of medicine and OM were increasingly important, and good use of their training time, and also whether they were able to gain practical clinical experience in these areas.

## 2 | METHODS

The research group was composed of two StRs in paediatric dentistry, an StR in oral medicine and a consultant in oral medicine. All had experience working in joint OM-paediatric dentistry clinics

and recognised the need for a solid grounding in medicine/medically compromised patients and OM. Following appropriate ethical approval for the study, the team compiled an online survey to capture anonymous basic demographics about those taking part and used Likert scale questions as well as free-text boxes to capture trainees' views on their training for managing MCC and those presenting with OM conditions. This was based on a similar survey tool successfully used for a specialty-trainee group in special care dentistry.<sup>11</sup> The survey link was shared with UK and Ireland StRs and post-CCST trainees in paediatric dentistry via the British Society for Paediatric Dentistry trainees' group at the end of 2020 and early 2021. A series of reminders were sent to try to increase participation and make the responding group as representative as possible of the target group.

### 3 | RESULTS

#### 3.1 | Demographics

A link to the online survey was shared with a target group of 51 members, and there were responses from 26 trainees, a response rate of 51%. Eighty percent of respondents were within 10 years of graduation and graduated from schools in England, Scotland, Wales, Northern Ireland, and Ireland. None graduated outside of the UK and Ireland. Ninety two percent had begun training within 4 years of the survey date. Sixty two percent ( $n = 16$ ) were in pre-CCST StR training, and the remainder ( $n = 10$ ) in post-CCST positions. Sixty-nine percent were in dental hospital-funded posts, the remainder in academic/university-funded posts, and 47% were completing a university higher degree alongside specialty training, such as a master's degree in clinical dentistry (e.g. MClinDent) or research-based degrees (e.g. PhD). All 10 post-CCST respondents were in hospital-funded training posts with 81% of all trainees in full-time training and 94% based in dental hospitals and schools. The majority (88%,  $n = 14$ ), were yet to sit the Tri-Collegiate Membership in Paediatric Dentistry (MPaed Dent) examination.

**TABLE 1** Systemic health & disease (medically compromised children and adolescents) in the GDC paediatric dentistry curriculum.<sup>1</sup>

	Yes (%)	No (%)
Are you aware of the systemic health & disease (medically compromised children/adolescents) guidance in the paediatric dentistry curriculum?	85	15
Are you aware of the teaching and learning methods for systemic health & disease (medically compromised children/adolescents) guidance in the paediatric dentistry curriculum?	54	46
Are you aware of the WBAs in oral & related systemic diseases in the paediatric dentistry curriculum?	58	42
Have you completed any WBAs relating to systemic health & disease (medically compromised children/adolescents) guidance in the paediatric dentistry curriculum?	88.5	11.5
Do you/did you have specific teaching/learning directed at systemic health & disease (medically compromised children/adolescents) in the paediatric dentistry curriculum?	61.5	28.5

#### 3.2 | Curriculum elements

The trainees in paediatric dentistry were asked a series of questions in relation to their views on their teaching and learning regarding MCC, and OM. **Table 1** shows responses in relation to MCC, and **Table 2** shows responses to the same questions in relation to OM. Sixty-nine percent ( $n = 18$ ) were aware of the OM guidance and 85% ( $n = 22$ ) were aware of the MCC guidance in the GDC curriculum. **Table 3** shows StRs free-text comments in relation to aspects of the curriculum.

#### 3.3 | Training experiences

**Figures 1** and **2** show Likert scale questions to further evaluate trainees' opinions on their knowledge and experience related to treating MCC, and those with OM conditions. Approximately half (57%,  $n = 15$ ), completed WBAs relating to OM conditions and two-thirds has had the opportunity to attend OM clinics during their paediatric dentistry training. The majority (94.4%,  $n = 17$ ), of these clinics were joint OM and paediatric dentistry clinics, with the remainder being general OM clinics. Only 12% ( $n = 3$ ) of trainees felt that their undergraduate and DFT had taught them all they needed to know relating to OM. The vast majority disagreed or strongly disagreed that it had prepared them well. DCT/SHO post rotations carried out by trainees included oral surgery, paediatric dentistry, orthodontics, oral and maxillofacial surgery, restorative dentistry, special care dentistry and OM.

#### 3.4 | Training and education methods

Trainees were also asked regarding their views on the training and education methods used for OM and MCC. **Figure 3** shows the responses. In relation to teaching of OM approximately half (54%,  $n = 14$ ) had formal teaching/learning as part of their training. This was delivered as part of clinical post-graduate degrees (e.g.

MCLinDent programme) or seminars, lectures and teaching sessions within the hospital. The teaching methods were similar for MCC with 62% ( $n = 16$ ) receiving formal sessions. Clinical experience in MCC was received through a combination of block rotations (15%,  $n = 4$ ), clinical attachments (35%,  $n = 9$ ), integration into everyday dental clinics (81%,  $n = 21$ ) and specific medically compromised clinics (42%,  $n = 11$ ).

### 3.5 | Learning opportunities

Trainees were asked about the regularity of learning opportunities. 50% ( $n = 13$ ) were on a regular basis with the remaining half being ad-hoc. Trainees were asked if learning opportunities were arranged within their programme or if they had to be sought on a voluntary basis and there was a mixed response with some trainees expressing

TABLE 2 Oral medicine in the GDC paediatric dentistry curriculum.<sup>1</sup>

	Yes (%)	No (%)
Are you aware of the oral medicine guidance in the paediatric dentistry curriculum?	69	31
Are you aware of the teaching and learning methods for oral medicine in the paediatric dentistry curriculum?	38.5	61.5
Have you completed any oral medicine related WBAs?	42	58
Do you/did you have the opportunity to attend oral medicine clinics in your paediatric dentistry training?	69	31
Do you/did you have formal teaching/ learning directed at oral medicine?	54	46

that their learning opportunities had to be sought on a voluntary basis with others receiving it as part of their programme.

## 4 | DISCUSSION

Feedback from trainees in paediatric dentistry in this study shows a mixed experience in covering the GCD curriculum outcomes regarding OM and MCC. Most trainees were aware of the guidance in the curriculum and felt that learning about OM conditions and MCC was a good use of their time. However, only half of the trainees were aware of the WBAs related to OM and MCC.

Most had the opportunity to attend joint OM-paediatric dentistry clinics but the teaching experiences were mixed, with half receiving formal teaching as part of their training programme, usually delivered as part of a post-graduate degree course taken by the trainee. Others noted that their learning experiences were on an ad hoc basis and was not consistent between trainees in their departments.

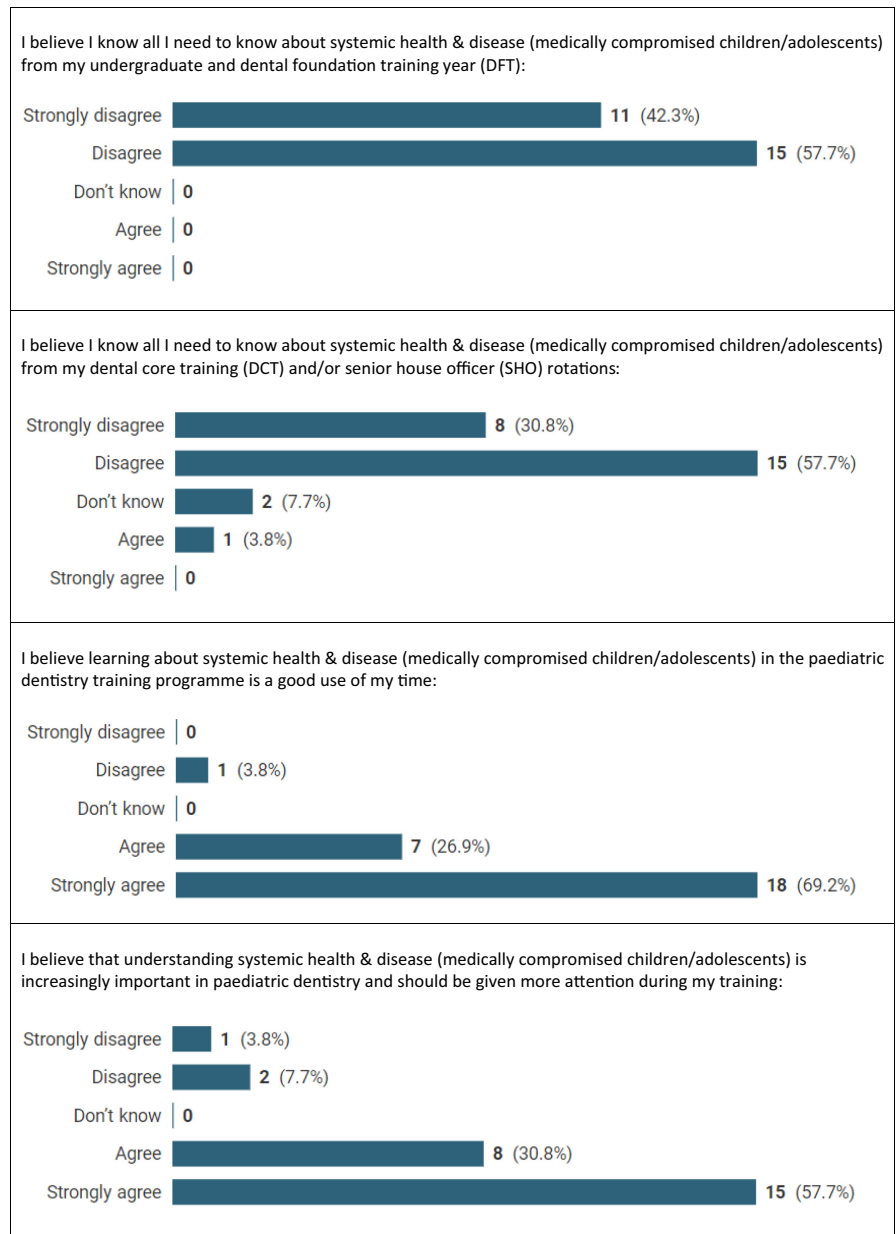
In relation to their knowledge from undergraduate and DFT, the trainees felt that this was inadequate and that more was required. In order to be eligible to undertake specialist training in paediatric dentistry several years of experience in various DCT/SHOs training posts is required and despite the trainees all having completed this they still felt that further learning was required in relation to both OM and MCC.

A third of trainees had concerns about their training in relation to OM and MCC, as detailed in the free-text comments (Table 3), these included insufficient learning opportunities and the impact of the COVID-19 pandemic. The COVID-19 pandemic was noted to have delayed attendance to medical clinics and joint OM-paediatric dentistry clinics.

Curriculum elements	"I feel the curriculum is too broad for this topic – it is like we need to know general paediatric medicine and dentistry which is so ill defined and too broad"
Training experiences in relation to oral medicine	"Having a dedicated program or OM training within my hospital, I feel I have ample opportunities" "I have selected 'disagree' with regards to the question regarding experience after UG/DFT and then DCT years as I feel that Oral Medicine is a topic you continue to gain knowledge in with further experience and time – clinician and textbook" "It is important yes, I would not say increasingly important"
Training and education methods	"I have good on-clinic teaching from the oral medicine consultant and through being on the clinic – but no formal training through my training" "Joint clinics delayed due to COVID" "My learning was through medical clinics based in the children's hospital and GA lists for med comp patients"
Learning opportunities	"Insufficient opportunities on oral med and medical clinics" "Useful to be based in children's hospital and working alongside OMFS colleagues" "Would have liked formal teaching and rotations on clinics" "Harder to gain experience since COVID 19" "No structured blocks which meant all trainees at my unit have differing levels of experience"

TABLE 3 Free-text comments of StRs in relation to aspects of training in OM and MCC.

**FIGURE 1** Trainee views on learning and knowledge of systemic health and disease.

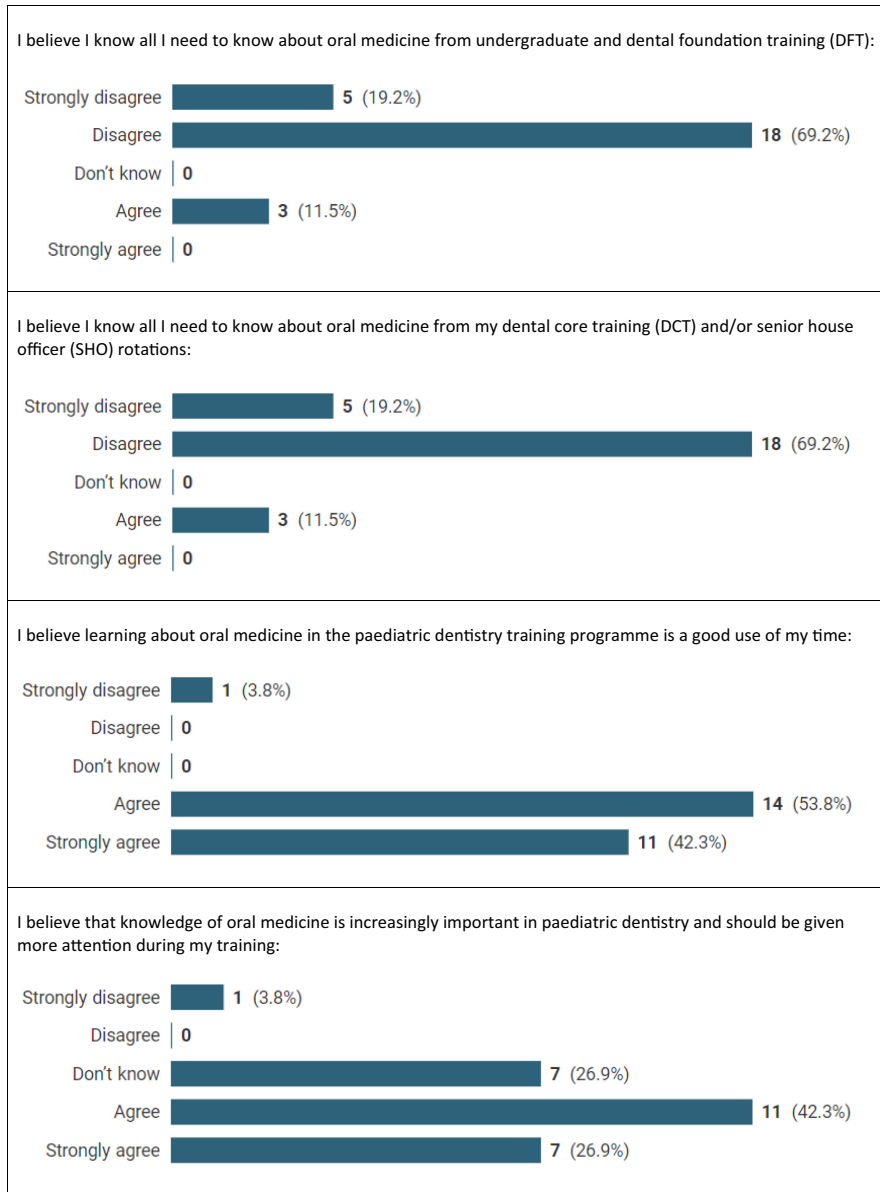


A review of the literature shows no similar studies where specialty trainees (US: residents) have been asked about their experience of teaching for and delivery of dental care for patients with complex medical histories. Internationally, it is recognised that children with special healthcare needs also need the careful attention of dentists with higher levels of knowledge and training. In 1998, in the US journal "Paediatrics," McPherson et al.<sup>12</sup> proposed a new definition of children with special healthcare needs (SHCN); "Children with special health care needs are those who have or are at increased risk for a chronic physical, developmental, behavioral, or emotional condition and who also require health and related services of a type or amount beyond that required by children generally."

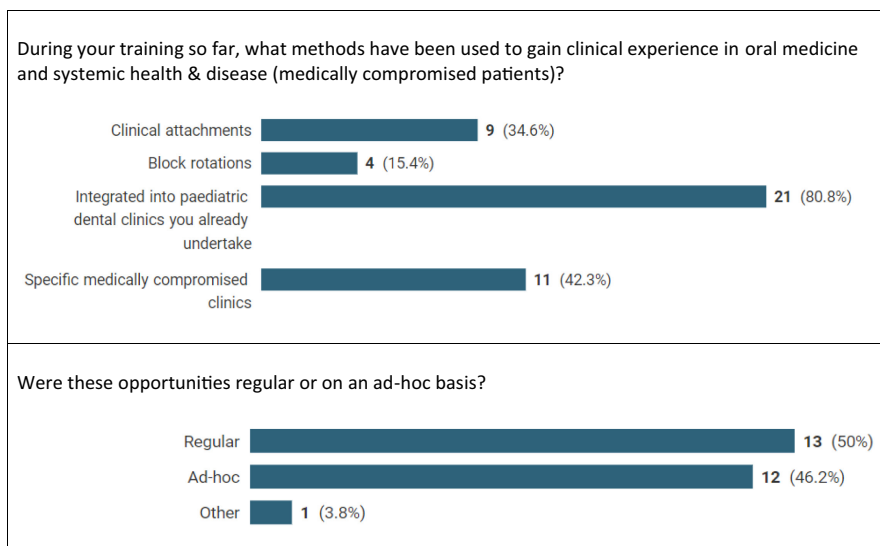
In their 2016 paper, Khokhar et al. state "Oral health of children with special health care needs has been one of [the] grey areas in the field of pediatric dentistry. There has been a general agreement that [the] disabled population has higher prevalence of dental caries, poor

oral hygiene, and compromised gingival and periodontal health than the otherwise healthy population."<sup>13</sup> In advanced general dentistry programmes in the US, there is increasing recognition that residents (postdoctoral students/specialist trainees) on these programmes need focused paediatric dental training, and the curriculums need to include "Systemic and oral health relationships."<sup>14</sup>

As with our study, where the views of paediatric dentistry specialty trainees were sought on the importance of knowledge of medicine in relation to medically compromised children and their dental management, Ocanto et al.<sup>15</sup> described the development and implementation of a training program for paediatric dentistry specialist trainees (residents) in a special needs dental clinic. They say "Provision of oral healthcare to children and adolescents with SHCN requires specialized knowledge, increased awareness and attention, and accommodation." and "Moreover, the Committee on Oral Health Access to Services Board on Children on Healthcare Services (2011)



**FIGURE 2** Trainee views on learning and knowledge in oral medicine.



**FIGURE 3** Methods used to gain clinical experience for trainees.

recommends improved dental education and training in order to develop a workforce of dental professionals qualified to work in community settings with vulnerable and underserved populations such as those with SHCN.<sup>16</sup>

## 5 | CONCLUSIONS

There is a recognition that children with special health care needs are a poorly served group, and that includes their dental care provision. Those involved in developing postgraduate curriculums in advanced general dentistry, and in particular paediatric dentistry, are making accommodations to make sure that these areas are included. As in our study, there should also be feedback from residents/trainees that these curriculum elements are adequately covered.

This survey of UK and Ireland specialist trainees in paediatric dentistry showed that trainees are aware of OM and MCC curriculum elements and felt that it was important to include these in their training. There was however a mixed experience in terms of access to formal teaching and learning opportunities and trainees were concerned about the effect of the COVID-19 pandemic on their training experience. Overall, trainees recognised that OM and MCC knowledge is important for the future, especially in light of the changing prevalence of congenital and acquired chronic disease, oral manifestations of systemic disease and the presentation children with OM disorders.

## ACKNOWLEDGEMENTS

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## CONFLICT OF INTEREST

The authors have no conflicts of interest to declare.

## DATA AVAILABILITY STATEMENT

Data can be made available on request.

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