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A longitudinal qualitative multi-methods study of new dental graduates' transition journey from undergraduate studies to professional practice

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Abstract

Introduction: New dental graduates' (NDGs) transition to professional practice is an important landmark and developmental stage in their career and in the UK it is supported by a formal educational transition process through a one-year salaried practice-based programme. However, little is known about graduates' experiences during this period. As part of a larger mixed-methods project, this study aimed to explore NDGs' experiences during their transition to professional practice, represented by Vocational Dental Practice.

Materials and Methods: Sixty-six NDGs from one dental school were invited to participate. Two rounds of in-depth interviews were conducted: Interview 1 upon NDGs' graduation and then Interview 2 was a follow-up interview after they had spent six-nine months in vocational dental training (VDT). At Interview 1, a subset of participants agreed to record longitudinal audio-diaries (LADs) and continued these for 6–9 months into VDT. Data from the interviews and LADs were analysed together using a thematic analysis approach.

Results: Eleven of the 66 invited NDGs agreed to be interviewed at Interview 1 (16.6%), seven at Interview 2 (10.6%), and six (9.2%) recorded LADs. Four topic summaries were developed around NDGs transition experiences: (1) conceptualisation of the process; (2) responses to the transition, (3) challenges and support and (4) relationships with stakeholders.

Conclusion: NDGs' transition to professional practice was perceived as exciting and rewarding on personal and professional levels but carried challenges. VDT and related stakeholders play a vital role of supporting NDGs into their new professional life.

KEYWORDS

dentist, education, new dental graduate, transitions, vocational dental training

1 | INTRODUCTION

Transition is the process of changing from one form or state to another. It is often described as a *path* or *passage* that an individual needs to go through to develop new beliefs and shape their behaviour.¹ Jindal-Snape (2016)² has suggested it is an ongoing, multi-dimensional process of psychological, social and educational adaptation, happening over time due to variations in context, interpersonal relationships and identity.² Hence, it requires learning, adjustment and enough resilience from the individuals involved, to manage the needs of the new 'status'.³ In common with other professionals, dentists transition through various stages during their professional life. The transition into practice following completion of undergraduate studies is an important period in a new dental graduate's (NDG) professional career, since they will be acquiring a new professional identity as a qualified independently practicing dentist, which is markedly different from being a supervised student, training within a controlled environment.⁴ Though this move can be a rewarding experience where competence and confidence can be enhanced, it has also been recognised as a daunting phase.⁵ Various approaches, therefore, have been put forward to facilitate smooth integration from university life into professional practice. These include undergraduate programmes that emphasise student-centred learning and focus on developing independent lifelong learners. In addition to that, the first year of professional practice also includes a salaried training scheme known as vocational dental training (VDT) in Scotland,⁶ which is the term used in this paper. In contrast, similar programmes in Wales,⁷ England⁸ and Northern Ireland⁹ are referred to as dental foundation training.

These measures aim to support and further develop the stated aim of the UK undergraduate remit, to produce dentists who are 'safe beginners',¹⁰ and who provide high-quality care to their patients.^{10,11} Transitions to professional life have been widely explored in the literature across a broad array of industries, including other healthcare professions,^{1,12} engineering¹³ and teaching.¹⁴ These studies suggest that transition experiences have a tangible impact on identity formation and ability to thrive in new roles. In dentistry, however, there is a dearth of evidence in this regard. Hence, exploring NDGs' transitions as they start their professional career as vocational dental practitioners (VDPs) would give insight into how early experiences within professional practice may shape their identity, practices and long-term professional competence.

This study is part of a multi-method research project (Figure 1 gives an overview of the project structure) and aims to explore NDGs' experiences of their transitions from being students, to becoming professional dental practitioners. This paper focuses on qualitative data collected using two methods of data collection; semi-structured interviews at two time points and longitudinal audio diaries (LADs). The quantitative data from this project have been reported.¹⁵

Figure 1 Dental student transition to practice project overview. This paper is concerned with data collected through the two

Summary—NDGs transition journey

Graduation and starting a professional career was conceptualised as being independent of being supervised, and becoming an adult. Both views were seen as positive changes in life. Spending time in practice changed some of these positive perceptions. Transition to professional life has become more associated with feeling responsible and liable for the making decisions in the clinic and outside.

highlighted methods on the right side: semi structured interviews and LADs.

2 | MATERIALS AND METHODS

2.1 | Ethical consideration

The University of Dundee, Schools of Nursing & Health Sciences and Dentistry Ethics Committee approved the study (Application number 2018009).¹⁶

Prior to Interview 1, the students were made aware of the potential for them to play a role in the project and their right to withdraw at any time if they did so. Their understanding of these was checked and students then signed the consent form if they agreed to participate in the two interviews. The form also included information on the LAD part of the project and the option to consent if the NDGs were willing to participate in this part of the study too.

2.2 | Study design

The study presented in this paper was part of a multi-methods, longitudinal research project. The outcomes of this part of the project focused on the transition experiences of the NDGs as they started professional practice and used a qualitative longitudinal methodology with two data collection methods. As transitions are conceptualised as an ongoing and dynamic process with adaptation over time,² the longitudinal study covered the period from graduation until 6–9 months into the participants time in VDT. Multiple methods were chosen to ensure participants could choose the method/s most meaningful to them and to allow some triangulation of the findings.

- Semi-structured interviews were conducted at two time points; Interview 1 when the participants had recently graduated as dentists (NDGs) but had not yet started their VDT. A follow-up interview (Interview 2) was conducted 6–9 months after the NDGs started their 12 month-long VDT placement.
- Longitudinal Audio Diaries (LADs) were recorded by the NDGs during the first 6–9 months of the VDT from the start of the placement.

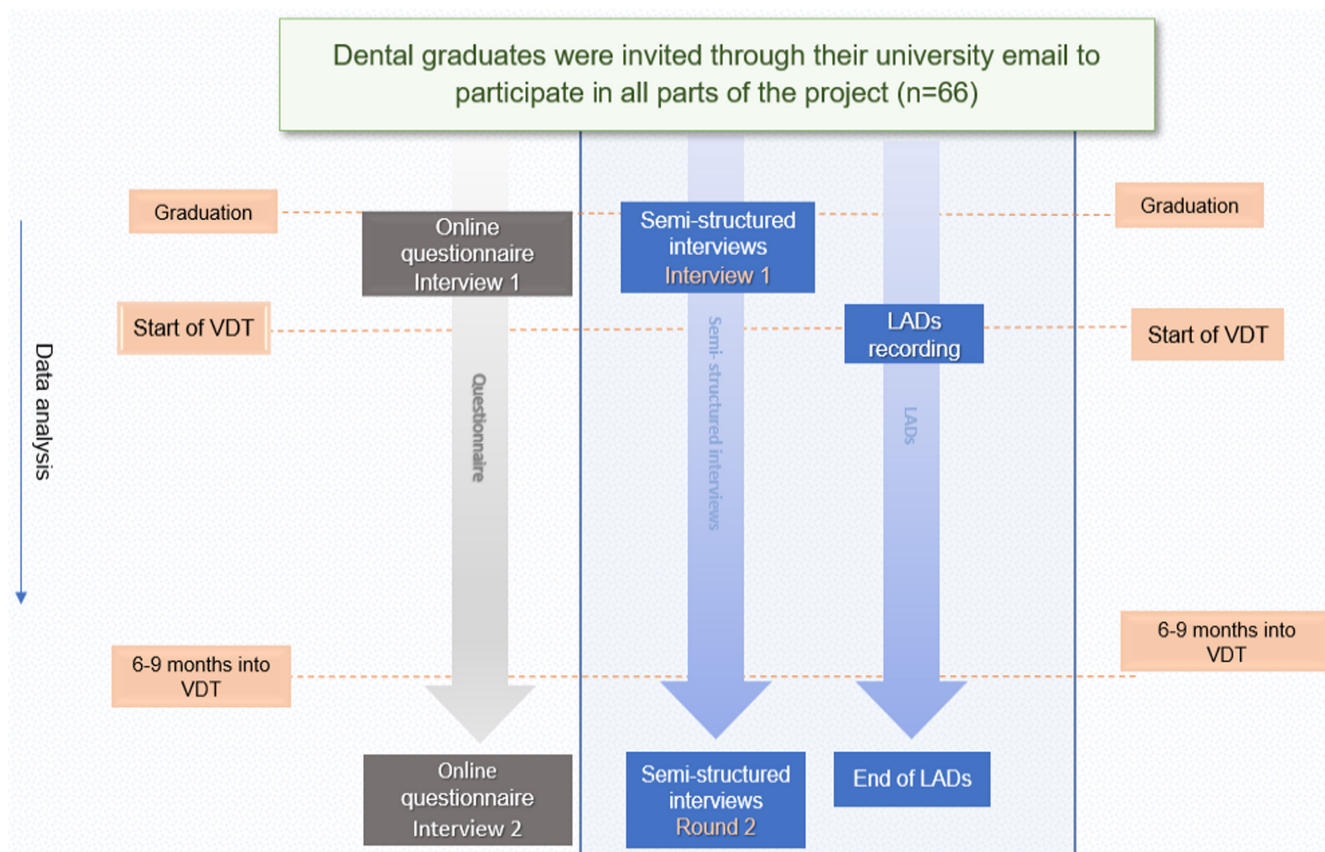


FIGURE 1 Dental student transition to practice project overview.

2.3 | Target population and recruitment

The target participants for the whole project were all NDGs ($N=66$) of a Scottish dental school of the academic year (2018–2019).

Recruitment was carried out by approaching final-year dental students through their university email. The students had just finished their final-year examinations but had not officially graduated. The invitation email aimed to recruit participants for all three of the project arms. It therefore consisted of: an invitation letter that gave a brief preview of the whole project; a link to access and submit a questionnaire regarding evidence-based practice (previously published)¹⁴ a participant information sheet (Appendix 1); and the consent form (Appendix 2) for the interviews and LADs. NDGs who had an inquiry about the study, or were willing to participate in both, or either, of the qualitative study arms, were asked to contact one of the researchers (WA) to plan time and interview location.

The recruitment process for Interview 1 was open-ended. It started with the invitation email where all the students were invited and continued during conducting the interviews using a snowball sampling strategy by asking the participants to help with recruitment by contacting other final-year students through their informal and social networks. Recruitment was stopped when no new topics were discussed. Hence, no sample size estimation was conducted prior to the study. Recruitment for Interview 2 was

conducted by inviting Interview 1 participants to also participate in the follow-up interview. The LAD arm of the project recruitment process was also conducted via the invitation email to the target population and continued through snowball sampling strategy till the start of the VDT.

2.4 | Collecting data

2.4.1 | Semi-structured interviews

Participants were offered face-to-face interviews in a quiet and convenient place within the dental school premises or online via Skype. A topic guide was used to outline discussion areas (Appendix 3), and participants were free to expand on other topics that were important to them. The interview interactions were conversational in nature and were recorded using a digital audio recorder.

2.4.2 | Longitudinal audio-diaries

To ensure that participants could capture incidents and experiences most relevant to them, as they happened, we used LADs. For their convenience and ease of availability, participants were

asked to record their diaries using their smartphones and to send the recordings to one researcher (WA) through end-to-end encrypted messages via WhatsApp.¹⁷ Written diaries were also offered to those who preferred to submit their data in a written format via email.

- Prior to starting recording, there was a discussion with the participants about the importance of recording meaningful occurrences to them during their daily practice. Meaningful in this context was defined as any event/interaction, whether in work or outside, that the participants they remembered or that left an impact on their feelings or behaviours. Fortnightly reminders were sent to the participants (solicited entries). However, they were also encouraged to send their reflections whenever they felt they had something to say (unsolicited entries).

2.4.3 | Data handling and analysis

Recordings and transcripts were stored in a password protected online folder in Dundee University secured OneDrive cloud. Transcripts were anonymised and any personal details within the transcripts that would have identified the participants were replaced with pseudonyms or omitted if it did not influence the transcript context.¹⁸ Data analysis was guided by Braun and Clarke's thematic approach¹⁵ with the aid of NVivo (released in March 2018).¹⁹ Data from Interview 1, Interview 2, and the LADs were analysed separately to look at patterns at particular time points, but findings were also pulled together to allow understanding around the longitudinal aspects of the participants' transitions.

For the interview, the analysis process was carried out using inductive and deductive coding techniques. Participants' views were analysed cross sectionally and longitudinally as a cohort. An initial coding frame of the main topics that were discussed by the participants was created based on the interview questions (main themes). The analysis process was then carried out inductively to develop subthemes according to participants' inputs and views.

For the LAD data, analyses were carried out using a reflexive thematic analysis approach,^{20,21} where themes and subthemes were developed based on participants' views by iteratively reviewing each text throughout the data collection and analyses process.

Crystallisation triangulation of the dataset from both methods (semi-structured interviews and LADs)²² was carried out at the data synthesis and presentation stages. Under each theme, the findings were synthesised and reported longitudinally over three time points to reflect the NDG's transition journey; (1) upon graduation (Interview 1); (2) during the participants' VDT professional practice (LADs), and (3) after the NDGs had spent at least six and up to nine months, into practice (Interview 2).

The findings from interviews and LADs are reported below as a summary of the main themes and points, followed by participant quotes to provide examples. The setting and participant information has been provided at the end of the quote to provide context.

3 | RESULTS

3.1 | Participant characteristics and data information

Interview 1 included a cohort of 11 participants and 11 interviews. The total interview time was 759 min, with a mean duration of 69 min, a median of 61 min, and a range of 38–129 min.

For Interview 2, seven NDGs agreed to sit for interviews. All participants had their training posts located in Scotland, and the total interview time was 487 min. The mean duration of interviews was 70 min, with a median of 68 min and a range of 47–97 min. Four interviews were conducted in person, and three were conducted over Skype.

Additionally, six NDGs agreed to participate in the LADs, with five providing audio diaries and one opting for written reflections. Across all participants, there were 47 entries (42 recorded and 5 written) that ranged from 2 to 24 per participant and lasted for 378 min.

Table 1 Characteristics of the NDGs who participated in Interview 1 ($n=11$ participants and 11 interviews) and Interview 2 ($n=7$ participants and 7 interviews) and LADs.

3.2 | Transition experiences

Both the interview and LAD data suggested NDGs' perceptions of transitions as a journey that they were going through. Four main themes were developed to reflect participants experience of their transition. For topic summary were developed: (1) conceptualising the process; (2) response to the experience over time; (3) systemic support and challenges and (4) relationships with, and support from, multiple stakeholders.

3.2.1 | Transition journey: Conceptualising the process

Participants shared their perceptions of this transition into professional practice being felt as involving

TABLE 1 Characteristics of the NDGs who participated in the study.

	Interview 1 ($n=11$)	Interview 2 ($n=7$)	LADs ($n=6$)
Gender			
Male	5	4	3
Female	6	3	3
Age (years)			
≤ 25	9	5	4
> 25	2	2	2
Previous post-graduate qualifications			
Yes	2	2	2
No	9	5	4

multiple aspects related to independence, including both life transitions, becoming an adult, and becoming a professional. On a professional level, transitions were related to embracing their new professional identity of being a qualified dentist, rather than a student, and to becoming an independent professional. Participants believed that their new identity would allow them to break free from the supervisory control and to exercise their own professional autonomy during their VDT. I'm looking forward to what's coming. Becoming a Dentist is something I really wanted to do and worked hard for, for five years.

(NDG 6/Interview 1)

Some NDGs were more apprehensive, as the transition involved many unknowns and they felt it required them to be more resilient than they had perhaps expected. I think the process of getting a flat, getting a job, moving myself to a new city, has been more stressful than final exams.

(NDG 11/Interview 1)

Similar views were generally echoed after the NDGs had spent at least 6 months in VDT, during Interview 2. Transition was still seen as a period with many changes; however, the participants became more aware of their new identity and what it might entail, such as clinical autonomy and the dynamic nature of their work. I think a lot of things have probably changed from dental school, it is a lot busier, you're seeing more patients, we have to make a lot of decisions with treatments by ourselves.

(NDG 6/Interview 2)

They also talked about recognising the increased accountability associated with being a qualified Dentist.... I have a lot more responsibility now... I can't really hide behind a supervisor or always get a supervisor to come over and check things.

(NDG 1/Interview 2)

3.2.2 | Transition journey: response to the experience over time

Upon graduation, transitions were often talked about with excitement and viewed as a new adventure.

However, some were finding the transition to professional life to be stressful because of the uncertainty associated with not knowing which dental practice would offer them a VDT position. It was a difficult time... not because applying processes (for VDT position) were difficult, but more because it's the unknown.

(NDG 7/Interview 1)

Reflections from LADs at the start of VDT showed NDGs to be nervous about starting the new chapter of their professional life, especially concerning their clinical skills, because of the time gap between graduation and the training year beginning. However, transitioning through a salaried scheme made the NDGs feel more secure.... I am still sort of shaky, it's been long time since I treated a patient, but luckily, you're still salaried, obviously you still want to get better and quicker...but it has no outcome on your salary.

(NDG 6/LAD-2 weeks into VDT)

Receiving a monthly salary was reported by the NDGs another enjoyable aspect of their new life. This was seen to be a rewarding feeling both on a personal and financial level. "Knowing that we're getting paid quite regularly now, it's taken a lot of pressure off sort of life outside of work, which is really, really nice."

(DG 3/LAD- 5 weeks into VDT)

As NDGs progressed through the VDT year and spent some time in professional practice, dealing with the realities of working in a general practice became a repeated theme in the NDGs' LAD reflections. Many of the logs started NDGs feeling tired after having a long week or similar sentiments. This was associated with the increased awareness of the accountability towards patients. I'm held more to account if things didn't go right, it really falls on me and I have to deal with it, it's not going to be deflected by anyone else, it's only my name will be at stake here.

(NDG 6/6 weeks into VDT)

Time management was a common area of struggle and talked about by most of the participants.... speed of consultation is becoming a major source of pressure and I would argue probably the greatest learning challenge for me.

(NDG 3/LAD-6 weeks into VDT)

Feeling more stressed over the financial constraints is related to treatment planning, and the need to factor in cost of treatment was also noted as a burden by the NDGs. I feel the realities of primary care within NHS and independent practice is kicking in...I can't do posterior composites when I want because someone has to pay for it...that's (sic) brings a great deal of tension on daily basis.

(NDG 3/LAD-8 weeks into VDT)

Some participants also said that the way they were forced to learn new skills as they were practising was particularly stressful. I was really struggling this morning. I feel like I am always in troubleshooting mode now. It's exhausting! ... I'm learning a lot, but I wish there were other ways, rather than encountering these challenges and being forced to think at the next level.

(NDG 4/LAD-11 weeks into VDT)

Dealing with the Scottish NHS payment software system was an area of struggle for NDGs even after spending more than 3 months in practice. It was often found difficult to navigate and treatments coding seemed unnecessarily complicated. SDR [Statement of Dental Remuneration payment system in Scotland] is a point that everybody struggles with...Certain items of treatment don't all come up...and even if you do, something is going to be blocked. Whether it's because the patient already had the treatment, or some other treatment's been carried out within a year. So, it's definitely not easy.

(NDG 3/14 weeks into VDT)

Also, referring patients who needed complex treatments that wouldn't be cost-effective to deliver in a general practice environment, rather than treating them was seen as unsatisfying. It's actually a very frustrating attitude, I really don't like thinking that: Okay this patient isn't suitable in General Practice because I don't have time for it.

(...NDG 6/LAD-16 weeks into VDT)

One participant reflected on the change of holiday leave allocation between the previous context (dental school) and the new professional life. We should appreciate our student life, because our holidays are shorter than all of the undergraduates, that we have it tough...I think I wasn't prepared for how much more demanding professional life is.

(NDG 6/LAD-20 weeks into VDT)

One of the participants also highlighted the fact that his practise was settling into a routine with the implicit message of it being boring. Everything's kind of winding down, in a sense that there's nothing new and it's just the same now.

(NDG 3/LAD-25 weeks into VDT)

Similarly, the routine nature of the professional practice in general practice was also reported by some participants. You're not looking forward to the next tutorial that's going to change the way that you're going to place composites or amalgams.

(NDG 8/Interview 2)

By Interview 2 (i.e., 69 months into practice), participants seemed to be adjusting to their new setting and the circumstances related to it. Comments implied that they were more confident, resilient and aware of who they were in their professional role. I was fairly anxious about everything at the beginning of the VT year. I think I feel more confident now, which is quite nice. I think it gets better, it's just a case of time.

(NDG 6/Interview 2)

Participants were, however, concerned about the transition in their professional role from being a salaried VDP to becoming a self-employed associate in terms of the financial burden. I can imagine it will be difficult and going from knowing what I'm going to be getting every month to not having a clue what I'm going to earn and just hoping I earn enough.

(NDG 3/Interview 2)

3.2.3 | Transition to practice: Systemic support and challenges

- The experiences of support and challenges during the transition period were explored by examining the participants' own perceptions and experiences of the two key programmes that aimed to support them and prepare them for professional practice—their undergraduate BDS programme and their VDT experience.
- Participants' undergraduate programme: Participants' views about their undergraduate experience were explored in both Interview 1 and Interview 2.
- During Interview 1, dental school experience was perceived with mixed views. The areas of criticism were around the amount and/or quality of the clinical exposure, and the diversity of patients to

treat in dental school.

As they looked back on their undergraduate programme, the first years were perceived by the participants as not relevant, and sometimes talked about as a frustrating, experience. The lack of clinical exposure during the early years was repeatedly highlighted.

There's not enough Dentistry early on. I remember a lot of people found second year stressful. There was a big part of the year is like microbiology and no relation to it being dental student. (NDG 9/Interview 1)...I was like... Why am I in the library every day? I wanted to be a dentist and I'm not working towards that.

(NDG 2/Interview 1)

As for the clinical experience, participants believed the lack of appropriate patients caused them to feel underprepared for complex treatments. Also, some thought patients attending dental school did not reflect the real range of patients' conditions at the general practices, I sat there in, in third year clinic saying to myself: So, let me get this straight. Experienced dentists in practice could not manage this patient. But here I am with literally months of tuition ... and I'm supposed to manage that? It was laughable.

(NDG 9/Interview 1)

Besides clinical exposure during the programme, different topics were viewed as being inadequately taught. The majority of participants discussed the lack of the business side of dentistry in their undergraduate teaching. We get very little teaching on business and litigation and paperwork that you have to do... You don't get much teaching on how you use the computer systems. You don't get taught on how to do payment plans for patients.

(NDG 3/Interview 1)

Feeling undervalued was another negative aspect associated with the undergraduate students' experiences. I don't necessarily feel that the dental school has looked out for its students, they don't treat you like an equal whilst you're a student, necessarily.

(NDG 2/Interview 1)• Regardless of participants' views on their undergraduate programme, the outreach experience was highly valued at both stages of interview.

It was like all-day seeing patients on outreach, which was nice because that's what it's going to be like when we start working.

(NDG 10/Interview 1)

At Interview 2, many of these perceptions shifted to become less negative. For example, the teaching of basic science subjects was now reflected back on and seen to be more valuable than previously they had considered. This new appreciation was often associated with understanding the role they played in their profession. If you want me to be closer to a tradesman, then I can probably cut out the better part of the first two years and skip straight on the clinical skills alone.

(NDG 2/Interview 2)

However, the views on the lack of teaching on the business side of dentistry did not change after 6 months in VDT. It (undergraduate programme) doesn't prepare you for the side more associated with salaries, and taxes, and list numbers, and NHS regulations, and things that you need to think about when you're working in a practice.

(NDG 6/Interview 2)

One participant reiterated the point that paediatric patients attending the dental school during their undergraduate experience, were not a true representative of the real-world practice. There's a huge difference. I think there was a greater dental need in the dental hospital. In General Practice, the kids might have one or two with fillings. But in dental hospitals, like, "Oh gee, oh gee, oh gee. I'm taking teeth out, doing lots of fillings.

(NDG 3/Interview 2)• Participants' VDT programme: The training scheme was perceived positively at both interview rounds and throughout the audio reflections. Almost all participants thought VDT was a successful experience that supported them through their transition, participants particularly highlighted the scheme's role in preparing them for what they described as real-life dentistry, which they felt was not covered during the undergraduate course.

It (VDT) prepares you to be a real-world Dentist. Like a professional, as a career...

(NDG 4/Interview 1)

I am sort of learning how do I make a living...How to deal with the nuts and bolts, and the regulations, and all these things.

(NDG 1/LAD-2weeks into VDT)

One NDG particularly appreciated the delivery of the educational aspect within this training scheme.It's like being in a really posh university. You get one on one teaching tutorials which is really what I think I love about this whole VDT thing.

(NDG 1/LAD-20weeks into VDT)• This positivity continued throughout the VDT. One of the participants expressed their sadness that this scheme was finishing soon for them.

I am very sad to be finishing VDT and really appreciate my practice... I got a very good experience.

(NDG 6/LAD-30weeks into VDT)

However, the application process for VT, which was undertaken in the final year of the undergraduate programme, was frequently reported as being very stressful. Their timing, being prior to the final year exams, was frequently mentioned as being poor. The perceived lack of an established communication protocol following a VDT interview during the application process was also described. Participants reported that there was no feedback on why they were not successful in attaining a particular post. In situations where they were successful, they were given short notice, sometime only two days, to make a decision once an offer had been made. This placed further pressure on participants to make such a crucial decision.On the Monday morning that the portal opened, you clicked on the website at 10:00 AM, and that was a website that we've never seen before, we didn't have a clue how it worked, what we were meant to be doing. That was just stressful.

(NDG 3/Interview 1)

You're driving all-round the country every day for interviews not knowing the outcome of the results... That's tiring and stressful.

(NDG 5/Interview 1)

...I had lots of interviews lined up... but I wanted to concentrate on finals, so I just took the first offer....

(NDG 4/Interview 1)

Summary—transition: support and challenges

Upon graduation, some aspects of the undergraduate curriculum were perceived with criticism, such as the irrelevancy of the first two years of the programme, difficulty finding suitable patients for students' competence levels, and lack of teaching on the business side of dentistry. Most of these views changed to become more positive, except for those associated with not learning about business. Outreach was described as the best clinical experience in the undergraduate curriculum and this did not change over time. Similarly, the positive views about VDT experience did not change over time.

3.2.4 | Transition: Relationships with, and support from, multiple stakeholders

The relationships between the NDGs' and some key stakeholders were another facet of the transition experience that was explored. The interviews and audio diaries showed the dynamics of these relationships and how they changed over time. There were different stakeholders relevant to the participants during their transitions. During Interview 1, participants focused on the relationship they had had with their undergraduate teaching staff. However, during LADs and Interview 2, their relationship with patients, dental nurses and VDT trainers was increasingly highlighted. The relationship of five stakeholders was highlighted during the interview: (1) patient; (2) teaching staff; (3) VDT trainers; (4) dental nurse and (5) GDC.

Patients

At Interview 1, all interviewed NDGs were conscious that their relationship with patients would be *different in general practice as patients were paying for their treatments. Delivering treatment in general practice that their patients were happy with was expected to be a difficult target to achieve. This expectation seemed to commonly arise from the perception that the patients who were paying for their treatment would have more authority and higher expectations of the standard of care than those attending the dental hospital who they had previously treated.*

In dental school, I think you have more authority over patients because it's cheaper...the patient going to be more okay, do what you feel better, but like in general practice... They'll have more authority; they'll have more of a say in what treatment they and they'll be a lot more vocal about letting me know what their expectations are and what they want.

(NDG 7/Interview 1)

The audio diaries showcased the NDGs' increasing awareness of the change in their relationship with patients. They reported that patients were more vocal and had more influence on the treatment plan suggested by the dentists. I am in a position of having to charge patients. My patients have to be not only willing to have the treatment, but willing to pay for the same treatment as well.

(NDG 1/LAD- 2 weeks into VDT)

I think the biggest difference is patient attitude. Their expectations play a much bigger part in every step of the treatment... They are happy to have treatments done if they know that they want it. If they're unsure, they always mention it.

(NDG 6/LAD- 7 weeks into VDT)

As the VDT progressed, negative remarks towards the patients' attitude were often highlighted. Some patients are really nice and understanding, but boy some of them are simply just not. I've had a couple of patients be difficult about demanding antibiotics, and situations where my temper was tested.

(NDG 1/LAD-14 weeks into VDT)

If a patient doesn't get what they want, is that just grounds to complain all the time and complain to everyone?... It frightened me a little bit in terms of the claim culture that we have at the moment.

(NDG 3/LAD-16 weeks into VDT)

After spending more than 6 months in practice, the NDG relationship with patients had improved for the NDGs participants, but negative remarks were still reported even.

Teaching staff

The role of the undergraduate educators was frequently perceived and reported with some negativity at the Interview 1 stage.

Some staff were like 'learn it if you want. If you don't, whatever'. You get that feeling from them that whatever they're teaching's not important to you, so you don't engage with it at all.

(NDG 8/Interview 1)

The negative opinions were chiefly associated with feeling undervalued, or the lack of motivation or team working of some of the staff. The audio diaries further

confirmed these perceptions where teaching staff were compared to the new education figures (VDT Trainers). I like the fact that my trainer's just a human, that probably makes mistakes, I think way different from the clinicians in dental school, they just, they get frustrated with the students.

(NDG 3/LAD-5 weeks into VDT)

These views had shifted by the Interview 2 stage. The teaching staff who were valued most at the two points were the clinicians who still worked in general practice, and the younger educators. They're [young educators] just closer to our generation, so they know more about how a modern day 18- to 23-year-old would like to be taught.

(NDG 7/Interview 2)

VDT Trainers

Trainers were perceived to have a very supportive role in their VDPs' transition during both interview rounds and the reflections from the LADs. This supportive role took different forms, from being a backup with minimal intervention with the VDP's professional practice, through to be a hands-on trainer with constant interactions with their VDPs. The audio reflections registered a personal aspect of why VDT Trainers were a perceived as a supportive element.

My trainer treats me like a Dentist...like an important part of his team rather than, again, just a VDP who's going to be there for a year and then leave again.

(NDG 4/LAD-5 weeks into VDT)

Dental Nurses

Working with a designated dental nurse was highlighted in some of the audio reflections as a new experience during VDT. The dynamics of this new relationship was perceived as positive and very helpful as dental nurses were knowledgeable of the NHS system.

Working with a nurse, that's definitely a new skill. Just never had a nurse for every single day, all day, sitting next to me, helping out, and working on a computer and putting all the payment codes through.

(NDG 9/Interview 2)

These positive views were echoed in Interview 2 interviews and associated with increased awareness of identity and the VDP assuming the role of the Dentist leading the treatment and team....My nurse is really supportive...It's my clinic though and I ultimately who makes the decisions...

(NDG 7/Interview 2)

General Dental Council (GDC)

The role of the GDC was felt to negatively influence the relationship between practitioners and their patients, by promoting the culture of complaints and referrals and reducing the quality of communication amongst them. The GDC will always be at the back of our minds because we know the GDC is there to protect the patient only.

(NDG 9/Interview 1)

Participants often felt that this unfair attitude had led to giving patients too much power and promoted a complaint culture against dentists. If a treatment fails which any treatment can, then we've got a target on our backs...the patients will complain cause the GDC is encouraging this complain culture.

(NDG 4/Interview 1)

The role of the GDC was still perceived with some negativity by Interview 2 stage. However, there also was an increased acknowledgement of its role in upholding the standards of the profession. "I do believe it is necessary for it to exist because you are going to have the weirdos who somehow slipped through the net, they are not serving their patients well and they need to be taken out of the profession".

(NDG 6/Interview 2)

One participant highlighted that the GDC was not as relevant a stakeholder as the dental school had made them think. When I was a student, the school used to make us think a lot about the GDC ... Now I am in the practice, I realised this is never true. I don't really think about the GDC. I think more about the health board and the NHS regulations.

(NDG 7/Interview 2)

4 | DISCUSSION

This qualitative study provides rich data to develop an understanding of NDGs' transitions to professional practice as dentists. Our findings demonstrate that transition is an ongoing and dynamic process with changes in experiences over time. The new dentists perceived the changes associated with being professionals with a mixed range of emotions, starting from feeling excited about this new chapter in their life, to feeling the burden of the increased responsibilities.

Summary—Transition: relationships with stakeholders

NDGs were aware that they would have a different relationship with their patients. This relationship seemed to decline over time, with NDGs feeling the patients had an increased influence on treatment planning, and higher expectations than those treated at the dental school. Although these views became slightly more positive by Interview 2, there were still some negative remarks. NDGs' opinions of UG teaching staff was mixed, with negative views associated with feeling unvalued and low teachers' engagement levels with students learning experience. VDT trainers were consistently perceived positively.

The regulator organisation, the GDC, was viewed as having a negative role, promoting a complaint and referral culture. These views changed after NDGs spent time in practice, and they were regarded as necessary to keep a good standard of the profession.

These experiences shaped NDGs' evolution towards becoming professional dentists and increased their awareness of what this new identity entailed.

It is noteworthy that this study was conducted within a Scottish context. Whilst there are close similarities with Foundation Training programmes in other parts of the United Kingdom, there are also structural, associated differences, the main one of which is remuneration system and others may be population density and demographics. Therefore, there are some limitations on how generalisable the results and conclusions are to other regions, and it is essential to consider the specific Scottish context when interpreting the findings of this study.

4.1 | Sample

The cohort who took part in the different parts of the project were dental graduates who were transitioning to VDT as VDPs. The sample was drawn from one school, due to the feasibility of the recruiting experience. All dental schools in the UK have comparable entry requirements and learning outcomes that have to be achieved for students to graduate. It would, therefore, be expected that our cohort of NDGs would be similar to other graduating cohorts in the United Kingdom. However, this does not necessarily extend to the generalisability of the project findings because the project was designed to explore transition experiences which were unique to the graduates' own contexts and circumstances, with many of them related to one school and VDT setting.

4.2 | Data collection methods

Two methods, interviews and LADs, were used to provide in-depth exploration of participant's unique transition experiences. The design of the interviews was appropriate in terms of the structure and depth for exploring the transition phenomenon. It allowed for a good balance between researcher focusing on key areas and the participants having the opportunity to tell their story, when it was most relevant to them.

However, the in-depth, semi-structured approach yielded complexity with a large volume of data and the analysis and reporting processes were challenging and lengthy. These difficulties have also been reported by other studies adopting similar interview designs.²² Interviews are also an 'episodic' data collection method which requires participants to reflect on their thoughts retrospectively. To some extent, this limitation was overcome by employing LADs alongside the two stages of interviews. The use of LADs is not a common method of qualitative data collection in dentistry, but was advantageous in this study as it allowed the opportunity to capture changes and adaptations over time.^{23,24} LADs captured participants' feeling and reactions as they happened, or at least, as close to the time as feasible, hence data collected through this method were less prone to recall biases than traditional retrospective methods (such as interviews).²⁴

4.3 | Limitations

There were limitations in the study data collection methods. Semi-structured interviews and LADs can be seen as subjective and can introduce various forms of bias by virtue of being qualitative.²⁴ However, these assumed 'limitations' are an integral part of the qualitative methodology. The researchers' subjectivity is acknowledged as it is nearly impossible to remove one's experiences and views while listening to and analysing others' views and reflections.^{25,26} This is especially true here, as the interviewer was a dentist, who had gone through a similar transition journey themselves. In qualitative methodology, the use of direct quotations of participants' own words encourages readers to draw their own interpretations about the findings based on their own experiences and views as well.²⁶

The literature was constantly consulted and revisited to assure the rigour of the study findings. Further, all authors were involved in data analysis of a sample of transcripts and agreeing on the main topic summary, and two data collection methods were used for triangulation of the findings.

4.4 | Evidence synthesis: transition journey to professional practice

This study employed an inductive approach to analyse topic summaries and synthesise evidence related to the transition experience of

NDGs. Through this process, three themes were developed, which bring insights into the challenges and opportunities perceived by NDGs as they navigate the transition process.

4.4.1 | Transition journey: conceptualise response and outcome

The literature has suggested that transitions can be perceived differently, even amongst individuals with fairly similar circumstances.¹ Indeed, some participants at Interview 1 reflected on their transition in more personal terms, while for others it was mainly associated with the professional dimensions of their life. These findings are in line with the multiple and multi-dimensional transitions theory developed by Jindal-Snape (2016)² where it was proposed that each individual experiences multiple transitions at the same time across different domains (e.g., psychological, educational) and contexts (e.g., university, workplace), and that they are dynamic. Furthermore, not all transition dimensions are equally meaningful for everyone.

Regardless of how the participants defined transition, excitement was the initial response to the changes associated with the transition to VDP at Interview 1. This was also noticed in LADs' initial logs, as participants emphasised the positive aspects associated with practicing professionally as qualified dentists, in terms of getting more clinical freedom, getting paid or feeling valued. This enthusiasm markedly declined as VDT progressed. The LAD data captured this gradual waning, which may be related to the participants trying to cope with 'the realities' of the workplace such as time pressure, and keeping patients happy and dealing with the NHS system. Falling into a routine might be another reason for the declining enthusiasm; the limited diversity of the treatment provided was frequently highlighted in LADs. The decline in the enthusiasm was also inversely associated with the realisation that the 'exciting' clinical autonomy acquired by being a qualified Dentist, created additional responsibilities and legal liabilities. Participants realised that responsibility soon after starting their VDT post and how it was different from being a dental student. This awareness might have led many participants at the time of Interview 2, to focus on these responsibilities whilst describing their transitions. These, however, were not always highlighted in a negative light; in fact, a sense of achievement was evident within the narratives of the Interview 2 comments with reports of more confidence, resilience, and independence. According to Ali et al. (2016)⁴ and Cabot et al. (2007),²⁷ these perceptions might be indicative of a healthy transition experience and an underlying satisfaction with the new identity and role.

4.4.2 | Transition from one setting to another

According to Darvil et al. (2021),²⁸ transition outcomes are highly influenced by the support offered, and challenges experienced, during the process. Hence, interview questions were aimed at exploring dental graduates' expectations/experiences of their undergraduate

programme and VDT. Those two settings were seen as the key systems concerned with supporting the dental graduates in their transition to professional practice.

When participants were asked about their undergraduate experience, they usually associated their views with the preparedness concept. Mixed views were reported amongst the participants. A pattern was, however, observed. The graduates were more inclined to highlight negative views about their undergraduate programme at Interview 1 stage. They felt they had not been prepared for the next stage of their career due to limited options and exposure, such as in relation to complex treatments, prosthodontics and the business of Dentistry. There was an implied sense of disappointment in the undergraduate experience from the participants' responses, at this stage.²⁹

It was interesting to see that most of these negative perceptions shifted to positive perceptions at the time of Interview 2. Furthermore, participants' comments about this became shorter, less descriptive and did not seem to carry a similar amount of emotion as at Interview 1. This might be because participants at Interview 2 changed their views on their preparedness for the clinical aspects of dentistry and not the business side after spending at least 6-months in VDT. This shift may also be as a result of a memory bias, where the content of an individual's memory of their experiences altered to favour the positive side. Or it may have been due to the training they received in their undergraduate course, coming back to them without realising they already possessed the necessary skills.³⁰ It is important to highlight that NDGs were still feeling underprepared for the business side of dentistry at both interviews and agreed on it as a deficiency in undergraduate teaching.

As for the VDT, and similar to Cabot et al. findings (2007)⁵ it appears that VDT is indeed a 'Success story', this is particularly with knowing the UK is one of a few places in Europe that make such training schemes available.³¹ All participants thought this training scheme had achieved its goal of providing a cushion during the steep learning curve of transition. VDT supportive impact was frequently highlighted throughout the study stages; it was expected to be positive during the Interview 1 stage. In the LADs, one participant even wished to stay within the VDT bubble forever, and all the participants at the Interview 2 stage reported this scheme to be a key element for a smooth transition. This scheme was perceived positively, specifically because it allowed the clinical independence that the dental graduates were aiming for, alongside a feeling of safety by being supervised and salaried.

4.4.3 | Transitions from one role to another

Transitions of the dental graduates also included changes to their role and interpersonal relationships with the related stakeholders. Interview questions explored the main stakeholders that play a role in the transition experience of dental graduates.

It appears that the relationships with each of these stakeholders changed over time as the VDT progressed. However, participant's

adaptation to their new role with their patients seems to have a prominent influence on their transition experiences.

At Interview 1, dental graduates believed that since patients were paying for their treatment, they would have a more authoritative role than the ones who were attending the dental hospital. This new role was thought to have negative elements, such as patients being difficult and more vocal about their preferences. Hence, most of the participants felt the need to adapt to the new dynamic within their relationship with patients. This adaptation process was initially perceived as stressful. One NDG described in their LADs that patient's active involvement in the treatment planning process as 'the biggest difference' they noticed when he started his VDT post.

LADs also revealed that, as the VDT progressed, the new relationship with patients was shaped by the (mainly negative) encounters between them and their patients. By the time of the Interview 2 stage, it seems that the participants had adopted a more cautious approach with their patients. The GDC's role, which was perceived as being unfair, might also have impacted the nature of the relationship between the dental graduates and their patients, which partly resonates with Thakrar and Wassif (2021) findings³⁰ and Al Hassan's opinion³² that the GDC's negative role encouraged the defensive Dentistry approach where dentist refer patients rather than opt to treat them due to their fear of legal litigation. However, the findings suggest GDC's governing role was becoming less relevant to the participants' routine practice as time went by. These findings are not fully in agreement with other studies' argument the GDC misconducted its role which led to the emergence of defensive dentistry.^{31,33} There was one LAD log about the GDC role at the beginning of one of the participant's VDTs, thereafter none of the NDGs mentioned the GDC for the next 6 months' logs. In Interview 2, many participants were more relaxed regarding legal liability. This might be because other sources of stress were more influential in the participants' daily practice, such as relationships with patients and dealing with the NHS system.³⁴

In contrast, the VDT trainer's role was consistently described as being supportive during both interview stages. It seemed these positive perceptions were more associated with the trainer's ability to build connections with the participants that were more like peer relationships than a teacher-pupil hierarchical one. Thus, they reported that they could relate to and trust their trainers. This may be in line with Claessens et al.³⁵ suggestion that building a positive interpersonal relationship between learners and teachers where a dialogue can be safely made would empower the learners and improve their engagement in their own learning. This could also explain the participant's preference of young clinician educators at the dental school, rather than older Professors where the hierarchy of the student-teacher formal relationship is usually perceived.

5 | CONCLUSION

NDGs' transition to professional practice represents an exciting moment, when all the hard work experienced during their

undergraduate period begins to pay off. NDGs are ready to enjoy the changes associated with professional life. However, this experience carries many of its own challenges. These begin before graduation with a stressful application process for VDT post and continue with adjusting to their novel role within the new context, including developing different relationships with their patients who are now paying for their treatment and negotiating a payment system and policies they were not familiar with.

VDT schemes have a positive impact on easing these challenges, giving NDG's security financially, and allowing them the opportunity for one-to-one supervision. VDT Trainers were considered to have supportive role in dental graduates' transition journey by being approachable and removing the hierarchical barrier that had been felt towards the undergraduate educators.

FUNDING INFORMATION

No external funding for this project.

CONFLICT OF INTEREST STATEMENT

The authors declare that they have no conflict of interest. WA was a postgraduate research student at the School of Dentistry during the data collection period. NI and SN are academics within the same School, and DJ is an academic at the same university, in the School of Education and Social Work.

DATA AVAILABILITY STATEMENT

The datasets generated during the current study are available from the corresponding author on reasonable request.

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APPENDIX 1

Participant information sheet for the semi-structured interview and LADs

University of Dundee

Title: Changes in new dental graduates' behaviour and self-efficacy towards guideline compliance in daily practice, during the transition from graduation through Vocational Dental Training

Investigator Waraf Al-yaseen (University of Dundee).

Phone: Censored

Invitation to take part in a research study

You are being asked to take part in a research study. Please read this explanation about the study and its risks and benefits before you decide if you would like to take part. You may take as much time as you need to make your decision. You should ask me to explain anything that you do not understand and make sure that all of your questions have been answered before signing this consent form. Before you make your decision, feel free to talk about this study with the research team you wish. Participation in this study is voluntary.

What to expect

The purpose of this study is to explore the transition period from undergraduate studies to independent practice, involving various behaviour constructs of new dentists towards evidence-based practice (EBP). We are also interested in the possible factors that might foster or hinder the use of clinical guidelines in daily practice. There is a lack of research investigating this crucial period of time and how it might influence new dentist's future clinical decision-making. This is why this research is being conducted.

You have been asked to take part in this research study because you are about to become a new registered dentist, having recently graduated from the University of Dundee. If you choose to participate in this study, you will be invited to complete two interviews with 6-9 months' time gap. The questions will relate to your experience of transitioning to independent practice and your thoughts/

views regarding Evidence-Based Practice. Interviews will be at a location that is convenient to you and should take 60-75 min. You will also be asked to participate in doing an audio diary for 6-9 months. You will be requested to talk about your experiences, feelings and thoughts during this important time of your professional practice.

Time commitment

Those who complete this consent form will be asked to do an interview for approximately 60-75 min. You will not be asked to provide any information that is sensitive in nature or poses contradiction to the confidentiality required by your employer. The interview time and setting will be determined by your preference. The interview will be tape recorded by me. At this time, I will also take notes on your expressed emotions during the interview. An interview guide will be used.

As a separate part of the study, you will also be invited to record regular audio tapings of approximately 6-8 min for 6-9 months, and whenever they felt like it (preferred weekly). Audio diaries may be done at any location and may be any length.

Risks

The study is considered to be minimal risk.

Termination of participation

Your participation in this study is voluntary. You can choose to participate, choose not to participate, and/or withdraw from participation at any time without consequences. Participation will be completely confidential. You may refuse to answer any question you do not want to answer.

Confidentiality/anonymity

The information that is collected for the study will be kept in a locked and secure area by myself at the University of Dundee for 10 years, after which it will be disposed of as confidential waste.

Any information about you will have a code and will not show your name or address, or any information that directly identifies you. All information collected during this study will be kept confidential and will not be shared with anyone outside the study. You will not be named in any reports, publications, or presentations that may come from this study. If you decide to leave the study, you will be given a choice as to whether you will allow me to use your data or not and your decision will be respected.

Your telephone number and e-mail address will be required for communication purposes to arrange interview sessions. Your preference for form of communication will be respected. This information will be stored separately from the data on an encrypted USB memory stick. All contact details will be destroyed by me at the end of the study period if not previously destroyed due to personal request.

For further information about this research study

If you have any questions, concerns or would like to contact me for any reason, please e-mail me at (Censored)

Everything that you discuss will be kept confidential.

APPENDIX 2

Interview guide questions with the NDGs

University of XXXXX

Title: Changes in new dental graduates' behaviour towards guideline compliance in daily practice, during the transition from graduation through Vocational Dental Training

Please tick the appropriate boxes Yes

Taking Part

I have read and understood the project information sheet dated DD/MM/2018.

I have been given the opportunity to ask questions about the project.

I agree to take part in the project.

I understand that my taking part is voluntary; I can withdraw from the study at any time, and I do not have to give any reasons for why I no longer want to take part.

I understand that my words may be quoted in publications, reports, web pages, and other research outputs.

Use of the information I provide beyond this project

I agree for the data I provide to be archived at the University of XXXX/ Dental School

I understand that other researchers will have access to this data only if they agree to preserve the confidentiality of the information as requested in this form.

I understand that other genuine researchers may use my words in publications, reports, web pages, and other research outputs, only if they agree to preserve the confidentiality of the information as requested in this form.

This is to consent my participate in:

Initial and exit interview

Longitudinal audio diaries

Name of participant [printed]

Signature

Date

For further information:

XXXXX

Email: XXXXXX

Thank you for your help

APPENDIX 3

Primary questions	Introduction Thank for participation. Questions about the study. Consent. Format of the interview.
Transition period experience	Describe understanding of transition? Thoughts about the experience so far? Has dental school supported their transition to practice professional? How so? Support expected during your VDT. Expectations around learning during VDT post? VDT trainer <i>Probe: communication skills, new treatment approach, time management, etc....</i> Thoughts about the supports received from various stakeholders (VDT trainer, teaching staff, GDC, NHS, Dental Nurse).
Final thoughts	Invite to elaborate on any answers Any additional comments or areas to discuss, that haven't been covered Thank for time and for sharing thoughts.