

# The Video Interaction Guidance approach applied to teaching communication skills in dentistry

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## Keywords

Video Interaction Guidance; dentistry; communication; intellectual disabilities; communication disabilities; special care dentistry.

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## Abstract

**Purpose:** To examine dentists' views of a novel video review technique to improve communication skills in complex clinical situations.

**Materials and Methods:** Dentists ( $n = 3$ ) participated in a video review known as Video Interaction Guidance to encourage more attuned interactions with their patients ( $n = 4$ ). Part of this process is to identify where dentists and patients reacted positively and effectively. Each dentist was presented with short segments of video footage taken during an appointment with a patient with intellectual disabilities and communication difficulties. Having observed their interactions with patients, dentists were asked to reflect on their communication strategies with the assistance of a trained VIG specialist.

**Results:** Dentists reflected that their VIG session had been insightful and considered the review process as beneficial to communication skills training in dentistry. They believed that this technique could significantly improve the way dentists interact and communicate with patients. The VIG sessions increased their awareness of the communication strategies they use with their patients and were perceived as neither uncomfortable nor threatening.

**Discussion:** The VIG session was beneficial in this exploratory investigation because the dentists could identify when their interactions were most effective. Awareness of their non-verbal communication strategies and the need to adopt these behaviours frequently were identified as key benefits of this training approach. One dentist suggested that the video review method was supportive because it was undertaken by a behavioural scientist rather than a professional counterpart.

**Conclusion:** Some evidence supports the VIG approach in this specialist area of communication skills and dental training.

## Introduction

Communication skills are a vital area of professional behaviour required for successful treatment and management of patients in a healthcare system. Ever since the seminal work of Peter Maquire in Manchester (UK), with undergraduate clinical

trainees, it has become universally accepted that some form of training is required to attain minimum standards of communication skills (1). A well-developed conceptual framework used in the teaching of communication skills in 'healthcare' is the Calgary-Cambridge Guidelines (2). This model describes each phase of a clinician/patient appointment and the role of the

clinician in the encounter. In this framework, the clinician needs to establish a rapport and identify the patient's reason for the consultation (3). By working together with the patient, the clinician gathers information and explores the medical problem from the perspective of the patient (3). On completion of the medical examination, the clinician provides details and information to the patient to enable each individual to negotiate a suitable treatment plan. This ensures that both parties work collaboratively to reach treatment decisions that are in the best interests of the patient. Finally, the clinician brings the session to a close and provides space for the patient to discuss the treatment plan further (3).

Communication skills are taught in dental schools often using the Calgary-Cambridge framework and assessed using the Dental Consultation Communication Checklist (DCCC) (4). The DCCC can be used to quickly assess whether the dentist implements particular skills, but this is used for the purpose of assessing the skills of the dentist, but does not provide an indication of how to communicate effectively with patients. Whilst the General Dental Council (GDC) in the United Kingdom recognises the importance of communication skills teaching during undergraduate dental education (5), what remains unclear is whether the communication skills outlined in the Calgary-Cambridge Guidelines are implemented in the encounters the dentist has with their patients? This question has some relevance as the GDC states that all dentists must undertake annual continuing professional development (CPD) courses and be re-accredited every 5 years (5). CPD courses cover a variety of clinical subjects and are delivered through instructional videos (6, 7), computer-assisted learning (6) and videoconferencing (8, 9). Dentists as part of their CPD are now required to maintain their communication skills to ensure high-quality patient care.

Ferris-Taylor (10) highlights the importance of developing creative training methods to enable clinicians to communicate effectively (see also Dolan) (11). One novel technique that has proved to be successful in clinical settings is video review (12, 13). This approach has been used to support healthcare professionals during their undergraduate training and is especially useful in providing feedback to vocational trainees (14, 15). Typically, undergraduate students are given the opportunity to watch their video recordings with patients to reflect on their experiences and behaviour. Ledema (16) suggests that video review can produce significant benefits for patient care and safety in environments where complex clinical interventions are provided (17, 18).

Research, however, has provided mixed results regarding the effectiveness of video review to improve clinical communication skills. Particularly, the feedback provided using videos may not be implemented as widely in the clinical setting because undergraduate and vocational trainees, on occasion, view the process as uncomfortable and stressful (19). Nilsen and Baerheim (12) implemented a video review technique to train undergraduate students in challenging clinical situations. Although it is not clear which aspects of the students' clinical work was covered during the review (e.g. communication skills or clinical competence), most students found the experience helpful, useful and reported benefits from the review process because the feedback was positive. The authors stressed the

need to be supportive and careful in providing feedback. One student suggested that they disagreed with some of the comments provided by their peers (12). However, this student stated that they felt the video review process was helpful and useful. Furthermore, one of the interviewees had stated that whilst their experience of video review had been positive, they suggested that negative feedback would be unwelcome, particularly when they had invested significant efforts to achieve high standards. Olde Hartman et al. (13), examined the use of video review to explore general practitioners' interactions with patients with persistent medically unexplained symptoms. Whilst the study defined and explored patients' beliefs or concerns, a direct assessment of the style of communication used by the healthcare professionals was absent in this study. Therefore, it was not possible to determine whether the GPs were using effective or ineffective strategies when they communicated with their patients.

An alternative method that is widely used in settings outside of clinical training, known as Video Interaction Guidance (VIG), uses a somewhat different approach (20). The VIG technique is not critical of the participant and centres on the participants' views of their interactions and communication strategies with the support of another independent individual, referred to as a 'guider'. The practicalities of this technique are somewhat different from the previous methods because either participant (the clinician and the guider) can stop the video at important moments where they wish to discuss something critical about what they are doing and why they are undertaking a particular behaviour. This may appear to be trivial, but there are good reasons to capture their views using snapshots of video footage. In Nilsen and Baerheim (12) studies, one of the students had stated that they disagreed with some of the feedback provided. This could result from an inability to visualise their behaviour at any given moment, because the video (in most cases) had been viewed from start to finish before the review period started. This approach would require more intensive processing and working memory than the VIG approach because the participant would have to store a wide range of behaviours in memory and accurately recall these at the end of the video segment. However, it is currently unknown whether this technique would be beneficial in the clinical setting and which types of behaviour would be tackled most effectively by this technique.

The VIG method is a theoretically driven approach that is used widely with individuals in challenging social situations (20, 21). VIG has been implemented in educational settings (22–24), used by parents and children living in difficult social environments (23), with parents of children with cochlear implants (25, 26), with a trainee speech and language therapist (27) and children with communication difficulties and intellectual disabilities (28, 29). In each case, the VIG approach allowed all participants to come to a better understanding of why and when their interactions were successful and highlighted practical methods to improve and maintain successful interactions in the future.

The efficacy of VIG is based on the careful selection of particular video segments and the way these are used in a session. The VIG method emphasises the need to explore attuned interactions, where the initiatives of individuals are acknowledged

and responded to by the receivers of those initiatives during an interaction. Initiatives are characterised by both verbal and non-verbal cues that are displayed by the individual taking part in the interaction. These cues include, eye contact, nodding in response to an initiative, speakers moving towards one another, individuals agreeing with each other through words (e.g. saying 'yes') and individuals repeating what has been said by the other individuals in the video. Successful communication strategies require each individual to receive and respond to each initiative. The quality of the responses and initiatives is measured through a criterion that identifies moments where individuals undertake and acknowledge the initiatives of others in the interaction. This occurs through close inspection of the video footage (by the guider) prior to a VIG session.

At the outset of a VIG session, the individual participating in the VIG session (i.e. in the video review) is asked to outline what s/he aims to achieve during the session. This is similar to the general methodology used to teach students using the Calgary-Cambridge Guidelines (2). It is also explained that VIG is a method that is used to assess effective communication strategies and aims to improve the communication strategies and interactional style of the individuals in the videos. Having recorded an interaction between two or more individuals, the guider becomes familiar with the video and selects segments that demonstrate moments where interactions are successful or more challenging (21). The principles of attuned interactions outlined by Kennedy (21) are used to characterise the interactions and select appropriate video segments. During the VIG session, the guider pauses the video at an appropriate moment (at a point where they want the individual to comment on the behaviours taking place) and asks the individual to reflect on what is going on in the video, how they and the other person felt during that moment and discuss their experiences. It may be proposed therefore that VIG could be used to help dentists identify when and how they implement effective communication strategies and furthermore explore if dentists find this video review technique to be threatening.

The work presented here is part of a larger research programme concerned with developing communication strategies with and for patients with complex communication needs. The background to the research programme is to address the issue of quality of communication for those with intellectual and/or physical disabilities and hence ensure dentists' compliance with GDC requirements. This case study is used by way of illustration to show the value of VIG in the dental setting, particularly in a clinical situation where the communication skills of the dentist are vital in providing high standards of oral health care. For this purpose, we have chosen to use video footage of each dentist providing care to patients with complex communication needs and/or intellectual disabilities. We believe that the skills required in these complex situations would be transferable into other clinical situations where communication is equally challenging. This study uses the principles of attuned interactions described in the VIG model, to observe dentists' interactions and communication strategies with four patients (21). Each video recording is edited so that dentists in the VIG sessions can observe and reflect on moments (now referred to as micromoments), where their interactions and communication strategies with the patients are more attuned. For the current

purpose, a micromoment contained short segments of video footage where the dentist and/or patients were interacting using verbal and non-verbal communication. Having observed these micromoments, dentists are given the opportunity to reflect on these micromoments with the assistance of the guider. The VIG sessions are recorded and analysed using discourse analysis to characterise the dentists' views on their interactions.

## Methods

### Participants

Three dentists (D1–D3) with over 20 years of clinical experience were recruited from the salaried dental service and naïve to the specific purpose of the study. Two of the participants were registered with the GDC under the speciality of special care dentistry. The patients had a range of intellectual disabilities and communication difficulties (see Table 1). One of the patients (Patient 1) was attending the surgery for the first time. All other patients had been treated by their dentist for a number of years and knew the dentist well. Patients attended the dentist for check-ups (patients 1, 2 and 4) or fillings (patient 3). A dental nurse was always present in the treatment room to provide assistance to the dentist. The first author carried out the VIG sessions and obtained training in the use of VIG from a qualified practitioner.

### Ethics

Informed consent to take part in the study was obtained from the dentist, the dental nurse and the parent, and if possible, consent was taken from the patient. Ethical approval to carry out the study was obtained from Research and Development at NHS Tayside and the NHS Lothian Research and Ethics Committee in Edinburgh (15/02/13 and REC 13/SS/0036).

### Materials & design

Video footage was taken using two Sony Handycam video recorders in the treatment room. The video cameras were placed in positions that allowed the researchers to view the

TABLE 1. Descriptives of the patients with intellectual disabilities and communication difficulties

Patient no.	Patient gender	Patient age (years)	Dentist	Patient disability
1	Female	61	D1	Moderate learning difficulties & some verbal communication skills
2	Male	49	D1	Moderate learning difficulties & mild epilepsy.
3	Female	50	D2	Moderate learning disability associated with Down's Syndrome
4	Female	44	D3	Moderate learning disability associated with Down's Syndrome

interaction between the dentist and the patient, but not placed where they would intrude upon the provision of dental treatment. The dentist was asked to carry out their routine procedures and as far as possible, ignore the video recorders. The dental appointments lasted up to 35 min. The stages that follow (1–3) describe the procedure used to select the video segments (micromoments).

1 Stages in the micromoment selection procedure

We will only describe the micromoment selection procedure, as the purpose of the study was capture the views of the dentists regarding the VIG session. Table 2 provides details of the procedure and stages that we used to code and select the micromoments used in the VIG sessions for each dentist.

We initially listed the time frame of all video segments (micromoments) where the patient and dentist were communicated verbally and non-verbally (Table 2, stage 1). These micromoments were coded using a checklist to allow us to identify behavioural qualities of the interactions between the dentist and patient, prior to the VIG sessions (see Table 2, stage 2). A modified checklist (see Table 3) was used to code the behaviours. The checklist (see Table 3) was taken from a coding system outlined by Kennedy (30) to identify the behaviours that take place during attuned interactions. In modifying the checklist, we removed two categories that examine the guider’s role in the VIG session. This checklist was used to assess the guider during their training, and thus the training the first author received ensured fidelity of the VIG exploration. Two coders (the first author, SQ and a co-author, DH) independently watched the micromoments via a projector. Having viewed a micromoment, the coders selected any of the behaviours from the checklist that they observed in the videos. The coders subsequently selected a small number of micromoments (8 in total) where the interaction involved dental procedures or were unrelated to dental procedures (e.g. a conversation about what the patient was going to do after

TABLE 2. The procedure used to select micromoments for the VIG sessions

Stages of video selection	Selection procedure
1	SQ identified the time frame in the video segments (now referred to as micromoments) where verbal and non-verbal communication took place between the dentist and patient
2	SQ and DH independently viewed and coded each video segment in chronological order using a checklist
3	SQ and DH selected four micromoments where the interaction involved a discussion of the dental procedures and four segments where the interaction involved informal conversations (e.g. What have you been up to today?)
4	RM or LS coded the micromoments independently using the checklist if SQ and DH could not agree in stage 3. Otherwise, this stage would be left out and the selection procedure would end

the appointment), (see Table 2, stage 3). If the coders were unable to agree on the video selections selected, a third coder independently watched the micromoments and coded the video using the checklist. If the third coders’ selections differed from the first two coders’, the micromoment was not selected and SQ and DH selected an alternative micromoment where they were in agreement.

2 Training the coders to use the checklist

Coders DH, RM and LS were trained by SQ to identify the behaviours listed in the checklist to recognise attuned interactions in the micromoments. SQ described examples of the

TABLE 3. Modified checklist of the behaviours characterising attuned interactions

Category	Interaction	Please tick (Dentist)	Please tick (Patient)
Being attentive	Looking Interested with friendly posture		
	Giving time and space for the other		
	Wondering about what the other is doing, thinking or feeling		
Encouraging initiatives	Waiting		
	Listening actively		
	Showing emotional warmth through intonation		
	Naming positively what you see, think or feel		
	Using friendly and/or playful intonation as appropriate		
Receiving initiatives	Saying what you are doing		
	Looking for initiatives		
	Showing you have heard, noticed the other’s initiative		
	Receiving with body language		
	Being friendly and/or playful as appropriate		
Developing attuned interactions	Returning eye contact, smiling and nodding in response		
	Receiving what the other is saying or doing with words		
	Repeating/using the other’s words or phrases		
	Receiving and then responding		
	Checking the other is understanding you		
	Waiting attentively for your turn		
	Having fun		
	Giving a second (and further) turn on the same topic		
	Contributing to interaction/actively equally		
	Cooperating - helping each other (working together)		

behaviours the coders should look out for and how these related to the categories contained in the checklist. For example, they were told that 'showing you have heard/noticed the other's initiative' could involve responding to what the patient is saying with words or smiling in response to a positive comment made by the patient. Whilst these behaviours were used to explain this category, the coders were told that there were alternative behaviours that could be categorised similarly.

### 3 The coding method

Coders SQ and DH used the checklist to identify any behaviours the dentist and patients displayed during the micromoments. The coders were told that there was no right or wrong answer and asked to select any behaviours in the checklist that they observed during each micromoment video segment. Only the coders were present in the room during the video selection procedure, and the display was not visible to any individuals outside the research team.

## Procedure

The VIG sessions lasted no more than 45 min were recorded via an Olympus Digital Voice Recorder (WS-811) and carried out in a quiet room at the University of Dundee or in dental surgeries. Only the dentist and the guider (SQ) were present in the room. Video segments were presented in a randomised order via a desktop computer or iPad. On completion of the VIG session, the dentists were asked to reflect on their experience of participating in the VIG session, what they learned about their interactions with their patients, whether it could be used to train dentists and where they believed the VIG method would have most impact (e.g. undergraduate training or in continuing professional development programmes).

## Results

The audio recordings taken during the VIG sessions were transcribed verbatim by SQ and formed the data that were used in the analysis. A thematic analysis of the VIG sessions was conducted. This involved the need to become highly familiar with the content of the VIG transcripts through in-depth reading and consideration of the text. A thematic analysis was developed by identifying key issues contained in the transcripts (using *a priori* topics derived from the main aim of the VIG session, in addition to issues that the individual participants in the VIG sessions raised). Passages of text were coded according to each issue or theme identified (31).

Three main themes emerged from the analysis including the dentists' 'Experience of using VIG', the 'Learning outcomes of the VIG session' and 'Using VIG to Train Dentists'. The dentists were asked to reflect on their experience of participating in the VIG sessions. Table 4 (*Experience of Using VIG*, Dentists D1 to D3) provide quotes from the transcripts of the VIG sessions. The discourse used by one of the dentists (Dentist D1) suggests that the experience had been positive and that viewing moments of successful interactions made them feel good. One dentist stated that he/she felt the process was not critical of their interactions, but made them notice positive aspects of the strategies they used in communicating and interacting with

their patient (see Dentist D2). A third dentist stated that they were not used to thinking about what they do in the surgery. They believed that the VIG approach assisted in their reflections on their interactions with their patient and was not an uncomfortable experience (see Dentist D3).

The guider asked the dentists what they had learned during the VIG session. Table 4 (*Learning Outcomes of the VIG Session*) provides quotes from the transcript of the VIG sessions. Dentist D1 highlighted the benefits of being on the same level as the patient (i.e. remaining seated). The discourses used imply that the VIG session had encouraged them to acknowledge the effect of the non-verbal strategies they used in the appointment (D1). The dentist stated that remaining at the same level, as the patient was one of the first things, they were taught as an undergraduate. The discourse implies that using the VIG approach had encouraged the dentist to recognise how they positioned themselves relative to the patient (i.e. 'just kind of seeing it starkly in front of you'). They also recognised the benefits of moving down to the level of the patient and staying in that position for longer: they mention the relationship between positioning and levels of patient anxiety (i.e. 'they may have relaxed a bit quicker'). The discourses used by this dentist suggested that they had a greater awareness of how they could maintain effective interactions with their patient in the future. Dentist D1 argued that being seated at the beginning would have enabled the patient to relax. In VIG terms, this would allow the dentist to appear more attentive to the needs of the patient, enable the patient time to receive the dentists' initiative and respond to their initiatives (the patient can receive and initiate a response).

Another dentist (D2) suggests that the patient displayed their dental anxieties through their body language (see Table 4, *Learning Outcomes from VIG*). The discourses used by the dentist indicate that they had not been aware of this before the VIG session ('she's not as relaxed as I think she is'). The dentist goes on to say that they have more awareness of the patient and their needs ('it'll make me more aware'). Although the dentists had accumulated many years of experience in dental practice, the dentist only recognised the benefits of looking at the patient's body once they had viewed the micromoment. This has the potential for the dentists to recognise any anxieties the patients display and counteract this accordingly. They also mention the fact that they had lost a little of their focus over the years. However, it is clear that the VIG approach enabled them to recapture their undergraduate training and recognise something new in the way their patient communicates their anxieties through their body language.

Reflecting on their role as a clinician and how they approach their patients was acknowledged (see Dentist D3). S/he mentions that they rarely had the opportunity to see how they interacted with patients and had not viewed themselves in the clinical setting since their undergraduate training. Similar to the previous dentist (D2), dentist D3 highlighted a lack of awareness of their role in the interaction. The VIG session had, in their view, led to an increased awareness of how they would approach their patient in the future.

Having mentioned that VIG raised their awareness of the needs of the patient and the dentists' role in providing treatments, the dentists were asked to discuss how the VIG method could be used to train dentists (see Table 4, *Using VIG to Train Dentists*). Dentist

TABLE 4. Quotes from the transcripts of the VIG session for each theme

Dentist	1. Experience of using VIG	2. Learning outcomes of the VIG session	3. Using VIG to train dentists
D1	I think it is always interesting watching things back. Em. You you see things that you don't realise at the time em and things you'd have done differently... often the the bits that I I enjoy when watching back are the bits where I kinda think that worked that's quite nice as well it is encouraging as well... I think that is quite helpful it kinda feels quite good as well I think	I think the whole level thing just kind of seeing it starkly in front of you will make me more aware although you know had you asked me to speak to a group of under- undergraduates about you know communication that would have been one of my key points get on the same level as the patient but actually em you know consciously doing it right at the beginning I think I think tha- that's probably key we maybe kind of hurried you know he maybe have relaxed a bit quicker	I think it it would be a good... I think the per I think the person who is doing the session needs to be very carefully trained
D2	I think it's awful good actually... cause it makes you actually really pick up on the good bits but also pick on other bits... it's not a critical thing it is just for them to see how they are because	When you're treating patients day after day after day you get into a wee bit a routine and you know as much as you want to do your best for each patient sometimes you do drift off it a little bit... it has shown me that her feet are twitching about em that she's not as totally relaxed as I think she is coming to the dentist so it'll make me more aware... with all my years experience I thought she was really relaxed but looking back at that she she's not totally relaxed	I think that's really good a good idea... yeah that would be a really good way videoing them and letting them see... it's not a critical thing it is just for them to see how they are
D3	I'm not used to analysing myself so much though and thinking about what I do I just do it [[laughs]]... I didn't feel uncomfortable at all	I'd never seen myself working since I was a first year trainee em and I do things without thinking about them definitely em and em and I have done things I know I definitely could do better	Absolutely I would definitely support that... I think it would help with teaching dentists... because if I was to look at the videos I'm just going to look at the clinical things... I think that is more uncomfortable... if another dentist is looking at your work as well... but for somebody outside you coming from a completely different perspective em and especially... trying to improve communication with patients... I think its much better coming from you

D1 uses discourses that suggest that the method would be useful, but point out that the guider should be trained to do so. Dentist D3 comments on the approach used by the guider and states that if the guider was another dentist, they would feel more uncomfortable and may focus more on dental procedures rather than communication strategies. The discourses used by dentist D3 suggest that the VIG approach is beneficial for behavioural aspects of communication skills training because it comes from a different perspective. They mention that the approach the guider used was 'better' than it would be from another colleague. VIG is perhaps beneficial because the guider is trained to lead the dentist through their communication strategy rather than being critical of the dentist. This was also highlighted by dentist D2 who says that the approach is not critical, but simply allows the dentist to view their interactions with patients.

## Discussion

Previous research suggested that clinical communication skills training should be implemented throughout the lifetime of the

healthcare professional (2). These authors also suggest that communication skills training should be implemented in real-life practice and become part of continuing professional development (CPD) programmes. In doing so, the clinician can extend their knowledge base and skills in more complex clinical situations. The current research agrees with this view and points out that this type of training (VIG) could provide significant benefits for patient care in complex clinical situations. All of the dentists in this study recognised aspects of their communication strategies that were least effective and stated that they were unaware of these issues. In particular, the dentists recognised that small changes to their non-verbal communication strategies (i.e. their use of body language) could lead to initiatives from their patients and reduce levels of dental anxiety.

On completion of the VIG sessions, dentists referred to the benefits of seeing themselves in the clinic. They specifically mention their increased awareness of the strategies they use to communicate with their patients during their appointments. One dentist mentioned that they were rarely given the opportunity to reflect on their own clinical practice and were unused

to thinking about their communication strategies. The dentists also discussed the way they felt during the VIG sessions and said they did not feel uncomfortable or criticised. This suggests that the VIG approach had achieved its goal (i.e. to develop attuned interactions in a positive way). Moreover, the dentists clearly viewed the experience as positive and useful.

Non-verbal cues were identified as important predictors of whether a patient felt anxious during the appointment. Specifically, body language was placed as a central theme in the discourses used by two of the dentists in the VIG sessions. In one case, a dentist referred to their physical position relative to the patient, whilst one of the other dentists noticed the movements the patient made during their dental appointment. The dentists believed that these types of non-verbal cues were linked directly to the anxieties experienced by the patients. This alone suggests that, at least for these dentists, the VIG session had increased the awareness of their own and the patient's communication strategies.

Communicating effectively with patients is one of the nine principles set out by the GDC (4). Key features of good clinical communication skills include an awareness of using non-verbal and verbal communication strategies in a positive manner (i.e. tone of voice and body language). The GDC in the UK states that all dentists must complete a set number of hours of CPD training courses to be re-accredited and registered every 5 years (5). A record of all of the courses completed by a dentist must also be submitted to the GDC for re-registration. Although there is a list of mandatory training courses that dentists must complete, there is room to add other skills training to this core CPD package. It would be beneficial to implement communication skills training throughout the lifetime of the healthcare professional's career rather than providing this during their initial clinical education (2). Whilst this initial training is both useful and a necessary component of the undergraduates skill set prior to entry into the clinic, we advocate the need to provide communication skills training in real-life clinical practice and to include this training in continuing professional development (CPD) programmes (2). In doing so, the clinician can develop their knowledge and skills. If this type of training is not made available in CPD programmes, the skills developed at the initial training phase will be lost.

Whilst group video review sessions may be less time-consuming for the trainer and reviewer, there are advantages to using one-to-one review sessions. In large cohorts of trainees, where there are time pressures on faculty and students, larger group sessions where peer-led feedback is provided may be more cost-effective compared to one-to-one sessions. However, this may not be practical in dental practice. Unlike other peer-led techniques, VIG is not critical of the participants and typically takes place on a one-to-one basis. In this case, individuals participating in the review are supported to self-reflect and come to their own conclusions about their interactions. One-to-one teaching practices are thought to encourage a trainee to become an active and autonomous learner, to tackle and define their own goals and needs, and link their prior knowledge of their clinical experiences with new situations compared with other group training sessions (30). Gordon (30) argues that this individualistic approach is more effective than other teaching methods (i.e. lectures, seminars, problem-based learning groups

and clinical tutorials), because the trainee can create their own personal and professional goals, and they are more likely to put these into practice.

The VIG guider is trained to use the technique and video footage to inform and encourage reflective practices. In this case, the individual participating in the VIG session is encouraged to reflect on their own and the other person's role in an interaction. Although these correspond to some of the features contained in the Calgary-Cambridge Guidelines (2), there are two distinct and important differences. First, according to Murray and Trevarthen (32), the social constructivist basis of the VIG approach is developed from *relational* aspects of communication rather than the aptitude of the individuals undertaking the interaction. In this way, the individual taking part in VIG is not being tested on how well they communicate and interact with patients or told to improve their interactions: a part of the process involved in the use of other training packages (2). Second, by stopping the video at appropriate moments during an interaction, the individual participating in VIG can assimilate and process the information more easily and focus on the skills that require attention. Other techniques do not use this moment by moment review technique, making it difficult for the reviewer to notice subtle nuances of their communication strategies. However, this is not to say that other training methods are not useful in improving communication skills in the clinical setting, particularly in situations where a clinical diagnosis or procedure has not been fully explained to the patient.

Whilst the coding procedure and the VIG session outlined in our study is time intensive, the video selection process used in preparation for a typical VIG session would not be as time intensive (it would normally take up to 2 h to complete). For research purposes, we used a more formalised procedure than the one typically used by VIG specialists. Having received a video recording from a reviewer, the guider would go through the video and select micromoments that demonstrate the principles of attuned interactions outlined in the checklist. The micromoment selection would be based on the ability of the guider to identify moments in the videos where the individuals demonstrated behaviours that were attuned. This process is based on the guiders experience and knowledge of using VIG. Given that the VIG session itself takes no more than 1 h to complete and can take place in a clinic, dentists can easily access this training on a regular basis without any significant interruption to their commitments in the dental surgery. Therefore, a VIG session could easily become part of the recommended CPD training and support the principles laid out by the GDC (i.e. to improve and maintain effective verbal and non-verbal communication strategies with patients).

Taken together, these results suggest that the VIG sessions had an impact on the way the dentists' understood their communication strategies with patients and was perceived positively by the dentists. Moreover, the dentists believed that having an individual outside of dental practice provide the guidance reduced their level of anxiety because they were not being judged on their practical skills. Therefore, we believe that VIG provides a novel way of teaching and developing behavioural aspects of communication skills and is a suitable method for integrating into dental training. Future research is needed to determine the generalisability of this technique in different

clinical situations and to evaluate the role of the dentist in complex clinical situations. However, it is likely that the technique is applicable to other complex clinical situations where patients feel anxious.

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## Conflicts of interest

There is no known conflict of interest.

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