Training for dental professionals improves confidence in managing patients with dental anxiety in Ireland

Précis

Reducing barriers to oral care for patients with dental anxiety in Ireland.

Abstract

Statement of the problem: Dental anxiety is common and its impact can be profound. Dental professionals may lack training and confidence to support patients with dental anxiety. In 2017, an educational intervention was provided to dental care professionals designed to improve participants' management of adults and children with dental anxiety. The aim of this study was to measure the impact of the intervention on participants' confidence in managing patients with varying levels of dental anxiety.

Methods: Dentists and dental care professionals were invited to participate in a bespoke training day on dental anxiety management. Self-administered questionnaires were completed immediately before and immediately after the educational intervention. Respondents scored their level of confidence in managing patients who are anxious about dental treatment before and after training using a visual analogue scale. Differences were tested using Student's t-test.

Results: Fifty-seven participants responded (RR=73.1%). Participants were predominantly female (n=52, 91.8%) and reported seeing a median of 12, 10 and two patients with mild, moderate and severe dental anxiety, respectively, per week. Paired data were available for 40 participants regarding mildly and moderately anxious patients, and for 39 respondents for severely anxious patients. Mean confidence scores increased from pre to post training, increasing by 9.1%, 11.9% and 25.1% for management of patients with mild, moderate and severe dental anxiety, respectively ($p<0.01$).

Conclusions: Training was effective in improving confidence among dental professionals regarding the treatment of patients with mild, moderate and severe dental anxiety. Participants highlighted barriers to oral healthcare for patients with dental anxiety.

Key words: Dental anxiety, confidence, training, evaluation

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Introduction

For some people, dentistry can be the stuff of nightmares. For those people, dental anxiety is a general term often used to describe their fear, anxiety and phobia.[1-3] High levels of dental anxiety affect between 10 and 30% of the population worldwide.[1,4] In Ireland about 20% of the population report dental anxiety.[5,6] Dental anxiety promotes a vicious cycle of avoidance of dental visits and associated deterioration in oral health. This ultimately leads to symptom-driven attendance, negative experiences and further avoidance. These experiences affirm negative cognitions and reinforce anxiety.[7,8] Therefore, people with dental anxiety are less likely to attend for routine care and are more likely to have oral disease.[9] Psychologically, people who experience significant dental anxiety report negative experiences at the dentist[10] and increased experience of pain.[11] The impact of this fear can be profound, affecting people in ways that reach far beyond dental visits and oral health.[12,13]

Dental anxiety holds a unique position of significance for the dental profession because of its prevalence and potential negative impact on the public. Dental professionals could make a holistic impact at a population and individual level through the prevention, diagnosis and management of dental anxiety. However, dental anxiety is seldom given adequate coverage in dental education and practising dentists often feel inadequately prepared.[14,15] Deficiencies of this kind have a role in initiating and perpetuating dental anxiety. If dental professionals were better trained about this phenomenon, they could avoid precipitating such anxieties,[16] identify those at risk of and suffering from dental anxiety, and support these patients appropriately.[17] They could also provide appropriate care to people with dental anxiety and recognise appropriate referral processes.[18] This has the potential to decrease reliance on restrictive supports such as sedation and increase patients' opportunity to learn coping skills. This would ensure a better experience of and outcomes from dental care for those with dental anxiety.

In recognition of a training need, the Irish Society for Disability and Oral Health facilitated a continuing professional education day in managing patients with dental anxiety for Irish dental professionals. This was the first such training day in Ireland, where there is no care pathway for management of dental anxiety. The aim of this study was to measure the effect of this training. The specific research question was: is there a change in trainees' confidence scores from before to immediately after an educational intervention designed to improve trainees' confidence in managing patients with dental anxiety?

Materials and methods

Design

This study adopted a simple pre-/post-training survey design. Surveys were completed anonymously immediately before and after a one-day training programme. Ethical approval was received from Trinity College Dublin.

Sample

An exhaustive convenience sample of attendees at the annual Summer Conference of the Irish Society for Disability and Oral Health in Dublin in 2017 was obtained for this study. This sample included dentists and dental care professionals.

Intervention

Training was developed by a team of experts in King's College London to meet the specific needs of dental teams who wish to support adults and children with dental anxiety in an Irish context. The aim of the day-long training programme was to enable dental teams to plan, implement and evaluate methods to assess and treat patients with dental anxiety. Participants were first introduced to basic concepts of dental anxiety and psychological supports for both adults and children. Applied techniques to assess dental anxiety were then taught with emphasis on measurement of anxiety using scales. Management techniques were taught including distraction, relaxation, control giving, muscle tension techniques and systematic desensitisation. Following this, groups practiced these skills via case-based learning before reviewing learning. Finally, attendees developed individual plans describing how they would implement and evaluate the learning in their practice. Learning outcomes for the day are summarised in **Table 1**. This study summarises elements of the evaluation of this training.

Table 1: Learning outcomes for the training day.

By the end of the session participants will be able to:

- apply methods for assessing dental anxiety among phobic and non-phobic patients;
- apply techniques for alleviating dental anxiety;
- outline the appropriateness and effectiveness of different techniques for alleviating dental anxiety;
- write a plan for implementing behavioural and cognitive techniques for alleviating dental anxiety in their practice; and,
- write a plan for monitoring the implementation of behavioural and cognitive techniques for alleviating dental anxiety in their practice.

Data collection

Self-administered questionnaires were completed immediately before and after the educational intervention. Recruitment was undertaken at online registration (www.isdh.ie). All registrants were advised of the intention to evaluate the impact of the intervention. Immediately prior to the commencement of training, the purpose of the study, details of anonymity, data storage, and the right not to take part were discussed. Participant information leaflets were also supplied. Attendees were given time to complete the pre-training survey at the start of the day. At the end of the session, attendees were given time to complete the post-training survey. All documents were anonymised.

Data analysis

Population demographics were presented using counts and proportions. Respondents were asked to score their level of confidence in managing patients who are anxious about dental treatment before and after training using a visual analogue scale. Difference in confidence scores were tested adopting related samples Student's t-test.

Results

Sample demographics

Fifty-seven out of 78 participants responded to the survey, giving a response rate of 73.1%. Most attendees were female (n=52, 91.8%). Fifty-four (94.8%)

participants practised in Ireland and three practised further afield. Attendees had qualified on average 16 years earlier (median=16; SD=9.5), with a range from 37 years to one year qualified. Respondents reported a mean of 32.2 hours at clinical practice per week (SD=8.9) and on average worked alongside four dentists in their practice (median=4, range 1-40 dentists). As **Table 2** demonstrates, a range of dental professionals attended, with most being dentists in public dental services. Attendees saw a range of adults and children with dental anxiety and disabilities.

Respondents reported seeing a median of 12 patients with mild dental anxiety (range 100-0), 10 with moderate dental anxiety (range 40-0) and two with severe dental anxiety (range 20-0) per week. Thirty-five (71.2%) assessed anxiety, but only 17.9% reported adopting a specific measurement of dental anxiety. Most attendees reported that they usually treat patients with dental anxiety rather than refer (**Table 2**).

Change in confidence

Figure 1 demonstrates mean levels of confidence (and 95% confidence intervals) as scored by respondents when asked how they would rank their level of confidence in managing patients who are mildly, moderately and severely anxious about dental treatment before (pre) and immediately after (post) training. Paired data were available for 40 participants regarding mildly and moderately anxious patients, and for 39 respondents for severely anxious patients. Mean confidence scores increased regarding all groups of patients from pre to post training. Mean confidence score increased by 9.1%, 11.9% and 25.1% for management of patients with mild, moderate, severe dental anxiety, respectively, from before to after training. These differences, when tested in separate paired t-tests, were statistically significant ($p<0.01$).

Perceived barriers

Cost, either to patients or to health services, was the most commonly perceived (n=15) barrier to dental treatment for people with dental phobia. This was followed by: time (n=13); lack of integrated services including referral processes and the availability of cognitive behavioural therapy (CBT) and sedation services (n=10); and, lack of training to manage dental anxiety (n=8).

Discussion

Summary of findings

This study demonstrates that bespoke training in the assessment and management of dental anxiety was effective in improving the confidence of dental professionals who treat anxious patients in supporting those with mild, moderate and severe dental anxiety. The effect of training seemed to increase with increasing anxiety, meaning that the greatest increase in confidence was reported for managing patients with higher levels of anxiety. Participants suggested that dental services for people with dental anxiety could be improved through improved funding, time allocation, training and care pathways that include dedicated sedation and psychological services.

Weaknesses of this study

There are a number of weaknesses relating to this study that readers should consider when interpreting these results. Firstly, the purpose of this intervention was to upskill dental teams, thereby leading to improved access and support for patients who experience dental anxiety. However, the assessment only measured confidence and not behaviour intention, behaviour,

Table 2: Professional details and behaviour.

	N	% (valid)
Professional status[a]		
Dental nurse	8	14.3%
Dental hygienist	5	8.9%
General dentist in private practice	7	12.5%
General dentist in HSE	26	46.4%
Specialist dentist or trainee	8	14.3%
Practice type[b]		
Public	43	76.8%
Private	12	21.4%
Patient group[c]		
Adults with dental anxiety	16	28.1%
Adults with disability	16	28.1%
Children with dental anxiety	22	38.6%
Children with disability	21	36.8%
Other	12	22.2%
Treat/refer[d]		
Treat	51	89.5%
Refer	6	10.5%
Assessment of anxiety[e]		
Yes, for all patients	22	38.6%
Yes, only for those we suspect are phobic	19	33.3%
No	16	28.1%
Specific anxiety measurement used[f]		
Yes	10	17.9%
No	46	82.1%

a Two participants (3.6%) reported other;
b One participant (1.8%) reported other;
c Which of the following groups do you mainly work with? Multiple response options allowed;
d Does your team usually treat patients who are anxious about dental treatment yourselves or do you refer them?;
e Does your team assess the level of your patients' anxiety?;
f n=56.

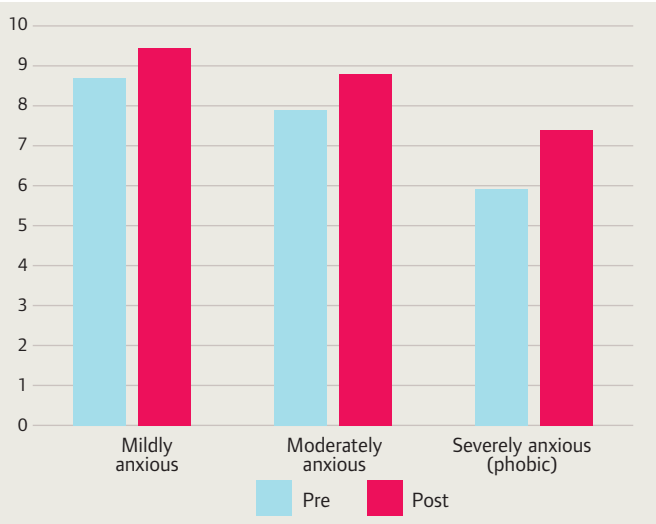

FIGURE 1: Confidence managing patients with differing levels of anxiety.

Mean difference mildly anxious 0.79 (95% CI 1.15-0.42); mean difference moderately anxious 0.94 (95%CI 1.39-0.49); mean difference severely anxious (phobic) 1.49 (95%CI 2.10-0.92).

access or patient experience. Nevertheless, confidence itself is important, because a lack of confidence is a barrier that prevents dentists from treating people with dental anxiety.[15] In our study, confidence was only measured immediately after training and it is unclear how this relates to confidence into the future. One Swedish study suggests that dentists who had training in dental fear as postgraduate students were more likely to be confident managing such patients afterwards, so we can be hopeful that such changes may persist.[19] It is fair to say that this study may best be considered as a proof of concept study for this type of training rather than a proof of effect. In essence, this study demonstrates that training could have, rather than does have, an impact for anxious patients.

Implications

This study demonstrates that continuing education may be effective in improving confidence of practitioners in managing patients with dental anxiety, but much more is needed. As a start, evidence-based models for undergraduate training should be delivered.[20] Ireland lacks the infrastructure to support a tiered purpose-designed dental service for people who experience dental anxiety. Access to sedation and general anaesthesia is extremely limited[21,22] and there are no purposely designed services to actively engage people with dental anxiety outside of a handful of interested private practitioners. Participants recognised this as a barrier for their patients with dental anxiety. Similar to comparable international research, they recognised the need for improved training and care pathways that offer a framework for dentists and patients that includes dedicated sedation and psychological services. Participants reported that Irish dental services could be improved through better funding of both public and private practice. Dentists in Sweden previously perceived financial barriers for patients with dental anxiety.[23] Ultimately, these funds must come from either the patient or, realistically, the State. Financial issues obviously relate closely to the issue of time, as dealing with patients with dental anxiety takes longer and funding structures may not recognise this. Previous research in Scotland reported that this is an issue for the majority of dentists there too.[24] In summary, this study suggests that it is time to address the lack of dedicated services for people with dental anxiety in Ireland. Schemas and service models are reported in the literature, which demonstrate the necessary complexity of such services.[16,25,26]

Conclusion

This study demonstrates the potential benefit from one-day bespoke training in dental anxiety for a workforce who treat these patients in the absence of appropriate funding, time, care pathways and training. The results of this study suggest that effective training can be delivered that fits the needs of practising dental teams. Further research regarding long-term stability of confidence, behavioural effects and patient outcomes is needed but this study demonstrates that capturing such data may be challenging.

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CPD questions

To claim CPD points, go to the MEMBERS' SECTION of www.dentist.ie and answer the following questions:

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CPD

1. What percent of the population report high levels of dental anxiety?

- ○ A: In Ireland about 10% of the population report dental anxiety
- ○ B: In Ireland about 20% of the population report dental anxiety
- ○ C: In Ireland about 30% of the population report dental anxiety
- ○ D: In Ireland about 40% of the population report dental anxiety

2. Which of the following are features of dental anxiety?

- ○ A: Symptom-driven attendance
- ○ B: Negative experiences of dental care affirming negative cognitions, reinforcing anxiety
- ○ C: Increased experience of pain
- ○ D: All of the above

3. Which of the following was not reported as a barrier to dental care for people with dental anxiety?

- ○ A: Cost to patients and dental practitioners
- ○ B: Time taken to treat patients with dental anxiety
- ○ C: Lack of access to sedation services
- ○ D: Lack of access to hypnotherapy services