Disseminating research evidence: what matters to general dental practitioners?

M. Papakostopoulou*[1] and D. Hurst[2]

Key points

Explores different means through which research evidence is conveyed.	Introduces the reader to existing dissemination methods he/she might not be aware of, for instance toolkits, podcasts, narratives etc.	Stimulates the reader to explore artefacts that extend beyond conventional dissemination methods.	Explores the concept of evidence-based dentistry and its usefulness in clinical practice.

Background In the era of evidence-based practice, pressure is placed upon clinicians to stay updated and inform their practice. This appears to be challenging, in the light of the sheer volume of the existing research evidence and the reported gap between knowledge and clinical practice. Therefore, the need to develop more effective dissemination methods is evident if knowledge translation is to be promoted. **Aim** To explore how dentists perceive different existing and potential means of receiving and communicating research evidence. **Methods** This was a qualitative study conducted through one-to-one artefact-stimulated semi-structured interviews conducted among general dental practitioners working in three European countries. Nine GDPs were recruited through purposive sampling. **Results** Four themes emerged as qualities essential for an artefact. First, a pleasant-to-use artefact; being multiplatform, more visual, interactive and inclusive of a social component. Second, a usable form of evidence; being brief/timely, easy to remember, convenient to use and easily found. Third, a relevant content; being contextualised and practical/procedural. Fourth, robustness of the evidence; having a trustworthy source. **Conclusion** The findings of the study suggested that research dissemination requires artefacts that are pleasant to use, while conveying a usable form of evidence, which is perceived both as relevant and trustworthy.

Listen to the author talk about the key findings in this paper in the associated video abstract. Available in the supplementary information online

Introduction

In an era when evidence-based practice appears to be a synonym for high quality practice, pressure is placed upon clinicians to ensure their practice is more scientific and empirically grounded.[1,2] The unmanageable volume of the existing evidence combined with the reported unwanted clinical practice variation,

Charles University in Prague, Orthodontic Department, Kateřinská 32, Prague, 12801, Czech Republic; Queen Mary University of London, Institute of Dentistry, Barts and The London School of Medicine and Dentistry, Dental Hospital, New Road, London, E1 2AD
*Correspondence to: Dr Margarita Papakostopoulou
Email: margy@papakostopoulos.gr

which reflects the gap between knowledge and practice, indicates the need to develop more effective dissemination methods.[3,4]

A number of different means through which research knowledge translation (KT) or evidence uptake is accomplished has been investigated.[6–13] The effectiveness of some remains undetermined, while others might be promising. Printed educational materials[7,14] and clinical guidelines[3,7,14] appear to have only a slight effect on behaviour change. Videos, although positively perceived, their effectiveness to induce behaviour modification remains inconclusive.[13] Likewise, the effectiveness of toolkits, as a KT strategy needs further exploration, despite their engaging and multimodal nature and ease of use.[9] Social media's effectiveness as a dissemination method has not been demonstrated,[11] although their

potential in reaching a large number of the population is recognised.[11] Moreover, podcasts appear to be an engaging tool with increasing popularity in educational environments.[8] Blogs seem to provide a rich multimedia environment that supports the 'anytime, anyplace learning' concept.[10] Narratives or storytelling, although not constituting a conventional way to disseminate research evidence, their use to convey evidence-based stories to patients was perceived by the participants as a highly effective communication tool.[12]

Multiple factors may impede research evidence uptake into practice.[5] Extrinsic factors, related to the context of learning and practice setting, as well as intrinsic factors pertaining to the format of the evidence itself, play a key role in the process of evidence uptake.[6]

Table 1 Demographic characteristics of participants (n = 9)

	Number of participants
Gender	
Male	6
Female	3
Nationality	
British	2
Greek	5
Italian	1
Egyptian	1
Educational level	
Dental degree	7
Dental and medical degree	1
Dental degree and Masters	1
Years of practice	
0-5 years	3
5-10 years	4
More than 10 years	2

Table 2 Participants' pseudonyms and selected demographic characteristics

GDP pseudonym	Age	Country-based (region)
Iris	28	UK
Brian	30	UK
Bianca	38	UK
Joelle	50	UK
Jason	26	Czech Republic – Prague
Achilles	27	Greece – island
Constantine	27	Greece – Athens
Orestes	33	Greece – Athens
Philemon	60	Greece – Athens

Table 3 Summary of themes

	Multiplatform
Is it pleasant to use?	More visual
	Interactive
	Inclusive of a social component
	Brief
Is it presented in a useable form?	Easy to remember
	Convenient to use
	Easily found – passively received
Is it useful?	Practical use – applied
	More relevant – contextualised
Is it trust-worthy?	Source – who produced it?
	Platform – where is it found?

It appears that the current evidence regarding the effectiveness of different KT methods remains incomplete.[9] The ways through which research evidence is best disseminated to enable its use needs further exploration.[9] As it is reported, both the usefulness and ease of use of evidence-based tools need to be improved.[2] The aim of this study was to explore how dentists perceive different existing and potential means of receiving and communicating research evidence.

Methods

The study design was qualitative one-to-one artefact-stimulated semi-structured interviews. The philosophical assumption underpinning the study is interpretivism, that is, interpretive epistemology and constructivism ontology.[18,19]

The study was part of a Master's thesis undertaken at Queen Mary University of London. The protocol of the study received ethics approval through the Queen Mary Ethics of Research Committee, reference number QMREC1890a.

The study was conducted among general dental practitioners (GDPs) based in different European countries. Convenience sampling was used and a maximum variation (heterogenous) sample was sought to be recruited by including GDPs of different gender, age, number of years in clinical practice, nationality and country-based practising.

Artefacts were selected and developed to try and achieve a range of modes, knowledges, and sociability. They included: a scientific paper,[20] an American Academy of Peadiatric Dentistry guideline,[21] a Cochrane podcast,[22] an audio narrative of evidence-informed practice change created by the authors, a British Dental Association toolkit,[23] one of two blogs,[24,25] and a Facebook group for dentists.

A semi-structured topic guide was developed that provided minimal structure to what was intended to allow participants to speak at length in a narrative way. The interview topic guide was designed to assess their perception of different methods through which evidence is, or can potentially be, conveyed. All the interviews were conducted in English. Three pilot interviews followed by nine interviews were performed. Interviews were recorded on a digital recorder and transcribed by a professional transcription service. The majority of the artefacts were shown in each interview but the exact number was determined by the time available and the length of discussion by participants around each.

The data collected were analysed using the constant-comparison method.[26] One of the transcripts was independently analysed by two researchers (MP and DH) and the emerged initial codes and themes were discussed. Further transcripts were analysed by one researcher (MP), with the second (DH) analysing selections from them. Codes were subsequently organised into themes by MP and DH through discussion.

Results

Nine GDPs took part in the study. Two of the interviews were conducted via Skype, while the rest were conducted in person. The interviews lasted between 29 and 74 minutes.

The demographic characteristics of the participants are presented in Table 1. The number of males was twice the number of females. A range of nationalities and varying clinical experience were reported among the participants. Although most of the participants had been practicing for less than ten years, two of them had 25 and 36 years of clinical experience.

Selected individual demographic data are shown in Table 2. Participants' names have been replaced by pseudonyms. The age of participants ranged from 26 to 60 years.

Summary of main themes

The use of tacit, so-called 'soft' evidence[28] originating from experience and the context,[27] appeared to prevail among GDPs over distilled, codified research-based 'hard' evidence. The perceived inadequacy of research evidence and the prioritisation of one's judgment and clinical expertise have been demonstrated in other studies.[17,27,28]

'*But with a bit more experience and knowing your patients, they are just guidelines, so you can't always follow them, you've got to follow sometimes your intuition as well, and do what's right.*' (Brian)

In the process of iterative analysis, four main themes emerged that are listed in Table 3.

Firstly, no one artefact would appeal to all participants. It appeared that the existence of a variety of different artefacts that conveyed

similar information but used different modes (audio, visual and written) allowed across the sample for different individuals to choose artefacts according to their respective learning styles and contexts.

Artefacts were generally perceived to be more pleasant when they were more visual, interactive and incorporated a social element. The visual component was necessary to attract users to engage with the artefact and to facilitate their understanding of the content. Important visual elements included more pictorial, colourful representations, tables and graphs, and the inclusion of video.

An artefact was perceived as interactive when the user felt they were an active participant in the learning rather than a passive receiver, for instance by providing feedback or completing quizzes. The need for interactivity is consistent with learning theories that activity is core to learning.[31]

'It [toolkit] was quite interactive, it wasn't just a one way, here's the information. It talks back to you as well and gives you some interaction with it. I found that very helpful.' (Brian)

Participants were universally interested in artefacts that enabled social interaction either by direct interaction with another person or when a person was a part of the artefact. There is a wealth of literature to support learning as social and contextual that extends beyond the acquisition of knowledge and skills.[17,27] GDPs liked the interactivity of social media and blogs, perhaps reflecting the social and active nature of learning through their engagement in shared conversation, debate and collective negotiation of evidence.[27]

'You cannot ask the text something and they can answer back, but you can ask a colleague […] I prefer the personal communication. To ask, to be maybe asked back because you can get into more details and it's more personal.' (Orestes)

Online social interaction among GDPs enabled exposure to a range of different experiences of practice. Freeman observed that every meaningful action, including practice, is socially informed and thereby is in a certain degree interaction.[32] Online discussions seemed to promote a 'collaborative learning environment' that shared experiences and enabled learning through a vicarious experience and through debate.[27]

'I find it very interesting to see because obviously a lot of people practise in different methods, so it's good to see the diversity and the differences between different approaches with different dental conditions. That's the only thing I use social media for in terms of my work.' (Iris)

Whilst interaction was deemed important, artefacts that conveyed human elements, even when one-way, appeared to encourage receptivity to the message.

'I like this communication, to see him or at least to see him from a video to see his face, to explain.' (Constantine)

Secondly, the need for the evidence to be in a usable form reflected some of the barriers pertaining to the access and use of artefacts or uptake of evidence. Brief and readily available information that does not require long engagement with the artefact was perceived as desirable. Our data supported the findings from previous research that time required to read and comprehend research is a barrier for evidence uptake and, thus indicating the necessity for more digestible forms of evidence.[17,27,28]

'There was this TV programme called GCSE Bitesize Revision […] What it was is they'd bitesize, they put the information in bitesize pieces. So that you can understand, and the student would go and be able to understand things in smaller chunks.' (Brian)

Qualities assigned to easy-to-remember evidence related both to its media and content. Videos appeared to be more memorable than other media.

'So I find that videos are more stimulating and more…they stick to the mind better than going through a long paper.' (Iris)

Narratives were perceived as more memorable than formal, scientific and research-based forms of evidence. This is not surprising, though narratives have been underused to convey research evidence, as it is reported that memory is primarily story-based and therefore stories appear to facilitate memory storage and retrieval.[12]

'It's easier not only to remember it [the narrative] but also to understand it, it's more pleasant to hear it because it's like a story.' (Constantine)

An artefact appeared to be convenient to use when it was easy to use, inexpensive and easily incorporated to everyday life, without requiring one's undivided attention. Moreover, it appeared that the delivery of evidence can be facilitated, if platforms that are already being used by the participants (for non-learning purposes) are exploited for the dissemination of research evidence.

'Nowadays everybody can open his Facebook or his computer throughout the day multiple times and he can learn many, many things.' (Jason)

The majority of participants preferred to receive research evidence passively, either by post or through email, rather than actively search for it. They perceived access to research as a major barrier.

'I think every single dentist on the register needs to have a newsletter that comes weekly in my email box that says in the BDA [British Dental Association], in the GDC [General Dental Council] a summary of what's going on in dentistry nationally.' (Joelle)

Thirdly, the perceived usefulness of the evidence or of the artefact that conveys it was found to be based on its relevance and practical use (or applicability). Contextualised evidence rather than de-contextualised, and practical rather than theoretical, were perceived as useful.

Contextualised evidence provided by the experience-based (audio) narrative was perceived as highly relevant in contrast to the de-contextualised podcast of research findings. Storytelling appeared to be not only more engaging but also GDPs empathised with the narrator and felt that the story was close to their experience of practice. Although narratives are often used to share practice-based knowledge,[27] the narrative used in our study was informed by research evidence in the form of NICE guidance.[33]

'I feel quite positive about storytelling […] you know the person who's giving the talk is someone who's also in your shoes.' (Brian)

De-contextualised codified research-based evidence most of the time was perceived as less useful mainly due to its non-understandable statistical focus and the perceived distance between the researchers/setting of the research and them/their own setting. This finding is not surprising, as it has been suggested that the linear translation of de-contextualised research evidence, despite being internally valid, is less applicable to real word conditions.[27]

'I wouldn't be able to relate to that [scientific paper]. I'd find a paper, I'd read it, it would have no bearing on my own clinical work, my own clinical environment.' (Brian)

Consistent with our participants' responses to the narrative and social learning, practical, rather than theoretical evidence, others have argued, is more likely to be used instrumentally, that is, lead to changes in behaviour or practice.[34] In contrast, theoretical evidence is more likely to be used conceptually, which involves changes mainly in the level of knowledge, understanding, or attitude, without necessarily leading to action-taking.

Fourthly, participants were concerned about the robustness of the evidence and for them this seemed to be determined not by the content *per se* but the trustworthiness of the source and the platform. Unless the evidence comes from a trusted colleague, the robustness of evidence appeared to be dependent mainly on the presence of institutional support.

'*Yeah, for me it's got Cancer Research UK and BDA behind it* [the toolkit] *so* […] *For me it makes me feel comfortable.*' (Joelle)

Discussion

Summary of findings and links with existing theory

A variety of sources, including 'soft' and 'hard' evidence, was perceived as necessary by the participants. This finding supports previous literature demonstrating that practitioners receive evidence from multiple knowledge sources, filter it according to their own experience and negotiate it in a process of trial and error.[17,27] This approach seems to deviate from the traditional concept of evidence-based practice that aims to use systematic methods to incorporate research evidence into practice and which, as it has been argued, may lead to a cookbook approach that may abstract humanity from clinical practice.[1] Instead it seems to be closer to the so-called 'evidence-informed practice',[1] which is person-centred rather than science-centred. The inclusion of soft and hard evidence, can be justified in the context that if the evidence to be conveyed is in conflict with the user's perception of useful evidence, which includes a number of formal and informal sources, it is likely to widen the gap between knowledge and practice.[27]

Furthermore, aligned with the existing literature[2] are our findings demonstrating the need for more usable forms of evidence in terms of timeliness and accessibility, as well as the necessity to improve the usefulness and ease of use of the artefacts that convey the evidence. Focusing solely on increasing the robustness of evidence, without simultaneously improving its usability, appears to be an ineffective way to inform and potentially modify clinical practice. Research evidence does not only need to be methodologically robust, but also usable in practice and presented in a way that can 'inform, inspire or influence'.[2]

The preference of participants towards certain artefacts (audio, visual, written) appeared to be related to some extent to their predominant learning style. However, although it was not the focus of this research as it is not directly related to artefacts, the majority of participants suggested that they learn through practising. It seems that (new) knowledge is acquired and consolidated only when it is actually experienced, for instance through hands-on courses or through their daily clinical practice. This appears to represent the so-called kinaesthetic learning or 'learning by doing', that involves learning through 'experience and practice (simulated or real)'.[29]

Our finding that GDPs like to be involved in sharing knowledge among colleagues, supports a need to consider ways in which we can encourage or support 'communities of practice' (CoP) in the role of disseminating research evidence.[17,27] CoP argues that learning is collectively reinforced and emerges through interaction, discussion, reflection and negotiation of both explicit and tacit knowledge.

Regarding the content of the artefact, the more de-contextualised and far from any specific or situated context the evidence was, the less applicable it was perceived, in contrast to the more subjective and context-bound. De-contextualised and thus internally valid research evidence appeared to be perceived as less relevant, since practice environment and patient factors are not controlled as they are in an experimental setting.[27] On the other hand, contextualised knowledge was perceived as more relevant, since it conveys information about the clinical conditions, routines and shared values. Contextualised evidence is usually associated with reflective rather than evidence-based practice, in which knowledge is shared and negotiated among practitioners over time and conventions are developed through their interaction with each other and with the context.[27]

However, the perceived relevance and applicability of evidence seemed to be in conflict with its perceived trustworthiness of evidence. In fact, those characteristics that were identified as increasing the robustness of the evidence were also identified as those that render the evidence distant to their practice. These included the setting in which the research is conducted, as well as the people conducting it. These barriers to evidence uptake, namely lack of familiarity, understanding and perceived usefulness, that were reported by our sample, have been previously reported.[40]

Strengths and limitations

This study attempted to shed light on an under-explored area of research. To the best of our knowledge, our research question has not been previously studied. Therefore, the study constitutes an original contribution to the existing literature. A wide range of different perspectives was captured as participants varied in terms of nationality and clinical experience. Moreover, the inductive and exploratory nature of the interviews encouraged the participants to reflect and imagine ways of knowledge translation that extend beyond the existing ones. The shared identity between MP, being a GDP by background, and the participants was made explicit to them, thus the perceived 'close distance'[41] between her and those being interviewed may have allowed them to express things they might not have otherwise.

A relatively small sample was selected and it is possible that other themes may have emerged had a wider range of practitioners been involved. Moreover, the recruitment of more older dentists, female dentists and more dentists who speak English as a first language would increase the credibility of the results. Another limitation of our findings is the lack of triangulation[43] of the interview data with other methods of data collection, such as observations or focus groups. This would potentially increase our confidence in the findings by allowing comparison and cross-check of the data collected through different methods. Nevertheless, triangulation of the findings would primarily enhance the comprehensiveness and reflexive analysis of the data, rather than increasing internal validity which would assume that any weakness in one method would be compensated by the strengths in another.[41]

Conclusion

Multifaceted interactive artefacts that are visual and social are more likely to be engaged with than those that do not share these characteristics. This research suggests we need to think more creatively about how we help GDPs come across and incorporate research evidence into their practice.

1. Woodbury M G, Kuhnke J L. Evidence-based practice vs. evidence-informed practice: what's the difference? *Wound Care Can* 2014; **12:** 18–21.
2. Greenhalgh T, Howick J, Maskrey N. Evidence-based medicine: a movement in crisis? *BMJ* 2014; **348:** g3725.
3. Waddell C. So much research evidence, so little dissemination and uptake: mixing the useful with the pleasing. *Evid Based Ment Health* 2001; **4:** 3–5.
4. Kennedy P J, Leathley C M, Hughes C F. Clinical practice variation. *Med J Aust* 2010; **193(8 Suppl):** S97–S99.
5. National Institute of Clinical Studies. Identifying barriers to evidence uptake. National Health and Medical Research Council. 2006.
6. Kastner M, Bhattacharyya O, Hayden L *et al.* Guideline uptake is influenced by six implementability domains for

creating and communicating guidelines: a realist review. *J Clin Epidemiol* 2015; **68:** 498–509.

7. Giguere A, Legare F, Grimshaw J *et al.* Printed educational materials: effects on professional practice and healthcare outcomes. *Cochrane Database Syst Rev* 2012; **10:** Cd004398.

8. Vatovec C, Balser T. Podcasts as tools in introductory environmental studies. *J Microbiol Biol Educ* 2009; **10:** 19–24.

9. Barac R, Stein S, Bruce B, Barwick M. Scoping review of toolkits as a knowledge translation strategy in health. *BMC Med Inform Decis Mak* 2014; **14:** 121.

10. Boulos M N, Maramba I, Wheeler S. Wikis, blogs and podcasts: a new generation of Web-based tools for virtual collaborative clinical practice and education. *BMC Med Educ* 2006; **6:** 41.

11. Narayanaswami P, Gronseth G, Dubinsky R *et al.* The Impact of Social Media on Dissemination and Implementation of Clinical Practice Guidelines: A Longitudinal Observational Study. *J Med Internet Res* 2015; **17:** e193.

12. Smith B, Tomasone J R, Latimer-Cheung A E, Martin Ginis K A. Narrative as a knowledge translation tool for facilitating impact: translating physical activity knowledge to disabled people and health professionals. *Health Psychol* 2015; **34:** 303–313.

13. Riley A R, Freeman K A, Marshall S. Dissemination of Evidence-Based Behavioral Advice via Video in Pediatric Primary Care: An Acceptance and Utilization Study. *Clin Pediatr (Phila)* 2016; **55:** 122–128.

14. Grudniewicz A, Kealy R, Rodseth R N, Hamid J, Rudoler D, Straus S E. What is the effectiveness of printed educational materials on primary care physician knowledge, behaviour, and patient outcomes: a systematic review and meta-analyses. *Implement Sci* 2015; **10:** 164.

15. Cohen D A, Levy M, Cohen Castel O, Karkabi K. The influence of a professional physician network on clinical decision making. *Patient Educ Couns* 2013; **93:** 496–503.

16. Nonaka I. A Dynamic Theory of Organizational Knowledge Creation. *Organization Science* 1994; **5:** 14–37.

17. Gabbay J, le May A. Evidence based guidelines or collectively constructed 'mindlines?' Ethnographic study of knowledge management in primary care. *BMJ* 2004; **329:** 1013.

18. Joubish M F, Khurram M A, Ahmed A, Fatima S T, Haider K. Paradigms and characteristics of a good qualitative research. *World App Sci J* 2011; **12:** 2082–2087.

19. Creswell J W. *Research design: qualitative, quantitative, and mixed methods approaches*. 4th edition. London, UK: SAGE Publications, Inc., 2014.

20. Gil-Martinez A, Grande-Alonso M, Lopez-de-Uralde-Villanueva I, Lopez-Lopez A, Fernandez-Carnero J, La Touche R. Chronic Temporomandibular Disorders: disability, pain intensity and fear of movement. *J Headache Pain* 2016; **17:** 103.

21. American Academy of Pediatric Dentistry. Guideline on Fluoride Therapy. 2014. Available at http://www.aapd.org/media/policies_guidelines/g_fluoridetherapy.pdf (accessed May 2018).

22. Cochrane. Podcast: Do tobacco cessation interventions provided during substance abuse treatment or recovery help tobacco users to quit? 2017. Available at http://www.cochrane.org/podcasts/10.1002/14651858.CD010274.pub2 (accessed May 2018).

23. British Dental Association. Oral cancer recognition toolkit. 2017. Available at https://www.doctors.net.uk/eclientopen/cruk/oral_cancer_toolkit_2015_open/index.html (accessed May 2018).

24. O'Brien K. Evidence based orthodontics: Kevin O' Brien's orthodontic blog. 2017. Available at http://kevinobrienorthoblog.com/tag/evidence/ (accessed May 2018).

25. Styleitaliano. Styleitaliano. 2017. Available at http://www.styleitaliano.org/ (accessed May 2018).

26. Glaser B, Straus A. The constant comparative method of qualitative analysis. *In* Glaser B, Straus A eds. *The discovery of grounded theory*. Chicago: Adline, 1967.

27. Salter K L, Kothari A. Knowledge 'Translation' as social learning: negotiating the uptake of research-based knowledge in practice. *BMC Med Educ* 2016; **16:** 76.

28. Higgins J W, Strange K, Scarr J *et al.* 'It's a feel. That's what a lot of our evidence would consist of': public health practitioners' perspectives on evidence. *Eval Health Prof* 2011; **34:** 278–296.

29. Fleming N. *Teaching and Learning Styles – VARK strategies*. Vark, 2012.

30. Leonardi P M. *Materiality, sociomateriality, and socio-technical systems: what do these terms mean? How are they related? Do we need them? Materiality and Organizing: Social Interaction in a Technological World*. Oxford: Oxford University Press, 2012.

31. Tynjälä P. Toward a 3P model of workplace learning: A literature review. *Vocat Learn* 2013; **6:** 11–36.

32. Freeman R. The practice of policy making. *Evid Policy* 2011; **7:** 127–136.

33. NICE. Type 2 diabetes: prevention in people at high risk. 2017. Available at https://www.nice.org.uk/guidance/PH38 (accessed May 2018).

34. Graham I D, Logan J, Harrison M B *et al.* Lost in knowledge translation: time for a map? *J Contin Educ Health Prof* 2006; **26:** 13–24.

35. Sackett D L, Rosenberg W M, Gray J A, Haynes R B, Richardson W S. Evidence based medicine: what it is and what it isn't. *BMJ* 1996; **312:** 71–72.

36. Bandura A. Social Learning Theory. 1971. Available at http://www.jku.at/org/content/e54521/e54528/e54529/e178059/Bandura_SocialLearningTheory_ger.pdf (accessed May 2018).

37. Nicolini D. Practice as the site of knowing: Insights from the field of telemedicine. *Organization Science* 2011; **22:** 602–620.

38. Greenhalgh T, Robert G, Macfarlane F, Bate P, Kyriakidou O. Diffusion of innovations in service organizations: systematic review and recommendations. *Milbank Q* 2004; **82:** 581–629.

39. Johnson L S. From knowledge transfer to knowledge translation: Applying research to practice. *Occupational Ther Now* 2005; **7:** 11–14.

40. Wallace J, Nwosu B, Clarke M. Barriers to the uptake of evidence from systematic reviews and meta-analyses: a systematic review of decision makers' perceptions. *BMJ Open* 2012; **2:** DOI:10.1136/bmjopen-2012-001220.

41. Mays N, Pope C. Qualitative research in health care. Assessing quality in qualitative research. *BMJ* 2000; **320:** 50–52.

42. Braun V, Clark V. Using thematic analysis in psychology. *Qual Res Psychol* 2006; **3:** 77–101.

43. Stewart K, Gill P, Chadwick B, Treasure E. Qualitative research in dentistry. *Br Dent J* 2008; **204:** 235–239.