

# Patients' and Clinicians' Views of the Psychological Components of Tinnitus Treatment That Could Inform Audiologists' Usual Care: A Delphi Survey

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**Objectives:** The aim of this study was to determine which components of psychological therapies are most important and appropriate to inform audiologists' usual care for people with tinnitus.

**Design:** A 39-member panel of patients, audiologists, hearing therapists, and psychologists completed a three-round Delphi survey to reach consensus on essential components of audiologist-delivered psychologically informed care for tinnitus.

**Results:** Consensus ( $\geq 80\%$  agreement) was reached on including 76 of 160 components. No components reached consensus for exclusion. The components reaching consensus were predominantly common therapeutic skills such as Socratic questioning and active listening, rather than specific techniques, for example, graded exposure therapy or cognitive restructuring. Consensus on educational components to include largely concerned psychological models of tinnitus rather than neurophysiological information.

**Conclusions:** The results of this Delphi survey provide a tool to develop audiologists' usual tinnitus care using components that both patients and clinicians agree are important and appropriate to be delivered by an audiologist for adults with tinnitus-related distress. Research is now necessary to test the added effects of these components when delivered by audiologists.

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## INTRODUCTION

Tinnitus is a phantom auditory sensation typified by subjective reports of a ringing or buzzing noise. Prevalence ranges from 5.1% to 42.7%, varying according to the investigators' definition of tinnitus used and generally increasing with the age

of the sample and population investigated (McCormack et al. 2016). The burden experienced by tinnitus patients varies with not only auditory but also mental health status, including but not limited to any potential combination of reduced sense of control, sleep disturbance, interference with relaxation, emotional distress (Meikle et al. 2012), despair, frustration, irritation, depression, fear, and worry (Tyler & Baker 1983). A systematic review by Pinto et al. (2014) concluded a high prevalence of mental health problems in the tinnitus patient population. Thus, interventions require flexibility to meet different patient needs. Five percent of people report annoying tinnitus, with 1% reporting tinnitus that has a severe impact on their life (Davis & El Rafaie 2000). Attempts to understand why some people suffer with their tinnitus and others do not have encouraged the psychological modeling of tinnitus distress (Georgiewa et al. 2006). Hallam (1987) first proposed a psychological model of tinnitus-related distress whereby the tinnitus percept leads to autonomic arousal that inhibits the ability to ignore the tinnitus percept, which in turn heightens autonomic arousal in a self-perpetuating cycle. This early model has since been expanded to incorporate avoidance behaviors as a mechanism by which habituation is prevented (Kröner-Herwig et al. 2003). More recently, McKenna et al. (2014) incorporated cognitive elements into a psychological model in which tinnitus-related distress is caused and maintained by negative automatic thoughts about tinnitus and the counter-productive safety behaviors that occur as a consequence.

A number of psychological therapies that draw on psychological models of tinnitus have been used to help address patients' tinnitus-related distress. The predominant approach is cognitive behavioral therapy (CBT) for which there is high-level evidence of effectiveness for tinnitus (Martinez-Devesa et al. 2010; Hesser et al. 2011; Hoare et al. 2011; Tunkel et al. 2014). CBT is a complex intervention designed to address emotional distress, which can be composed of any number of different techniques. Cima et al. (2012) identified that CBT for tinnitus has not been tested in a way, whereby the individual techniques of CBT are used when indicated by the severity of individual patients' tinnitus complaints. Their solution was a two-stepped care protocol, with step 1 including group education (including fear avoidance) and step 2 progressing to a combination of psychological therapies (including cognitive restructuring). Cima et al. compared this "stepped care" with care as usual for people presenting with tinnitus as a primary complaint, finding reduced tinnitus severity and impairment, and improved health-related quality of life for patients receiving one or two steps of

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specialized care over and above those receiving care as usual. Similarly, Henry et al. (2005) developed a five-step “progressive tinnitus management,” with patients receiving screening and group education before more intensive care. Henry et al. (2012) have since added CBT to their stepped care model, with results indicating a trend toward improvement in self-perceived functional limitations. Cima et al. and Henry et al. each deconstruct care into organizational frameworks for healthcare to improve the cost-effectiveness of services.

One component of CBT known as “cognitive restructuring” involves the identification and modification of negative automatic thoughts. Alternatively, acceptance and commitment therapy (ACT) eschews this approach in favor of cognitive defusion, whereby the clinician helps the patient to change the function of the negative cognitions, rather than modifying them per se (Hayes et al. 2006). For example, patients may be instructed to repeatedly verbalize their negative thoughts in unusual voices to help them to see that thoughts are just thoughts rather than objective facts (Varra & Follette 2004). The purpose of cognitive defusion is to distance the patient from the literal meaning of their negative thoughts. These are but two examples of several different psychological approaches. However, they seem to use opposing mechanisms toward relieving patients of their negative automatic thoughts; whereas ACT encourages acceptance of negative thoughts, the goal of CBT is to change them. Despite this difference, both demonstrate more benefit than other interventions or waiting list control conditions (Martinez-Devesa et al. 2010; Westin et al. 2011). Thus, it remains unclear which approach to use and when. CBT is supported by a considerably greater evidence base than ACT in the tinnitus literature, which has emerged more recently in the last decade (Westin et al. 2011; Hesser et al. 2012). This is not to say that evidence, or lack thereof, does not merit consideration. ACT has been more extensively tested outside of the tinnitus literature, with small to medium effects that are comparable to CBT (Veehof et al. 2011; Arch et al. 2012; Hann & McCracken 2014). However, the effects reported in those studies were not straightforward; some patients with anxiety problems responded better to ACT than CBT, and vice versa (Wolitzky-Taylor et al. 2012). Certainly, the stronger the evidence, the more likely the positive outcome, but one size does not fit all. The field of tinnitus intervention does not currently enjoy a range of evidence-based interventions that can address the diversity of the tinnitus patient population.

The tinnitus management literature is limited to psychological therapies as delivered by psychologists only. However, the U.K. Department of Health (Department of Health 2009) recommends that:

*“Where psychologists are not available, the audiologist’s role should extend to offering psychological treatment through CBT or other appropriate counselling techniques.”*

#### **Department of Health 2009, p. 15**

The Department of Health has a responsibility to create national policies and legislation to provide strategic direction for the National Health Service (NHS) in the United Kingdom and influencing global leadership in health and care policy, giving it significant influence over the provision of audiology services in the United Kingdom (Department of Health 2013). The Department of Health states that the reason for this guidance is to “reduce waits for patients” (Department of Health 2009, p. iv). This goal corresponds with the finding that two-thirds of

audiologists in the United Kingdom do not have the option to refer patients with tinnitus to a psychologist (Hoare et al. 2012). One solution to this problem would be to recruit and train more clinical psychologists. However, until this need is met by psychologists, one possible alternative is to train audiologists. Traditionally, counseling for patients with tinnitus-related distress was delivered by hearing therapists in the United Kingdom. Hearing therapists are audiology-related professionals who have undertaken separate training in rehabilitation skills and counseling, including aspects of CBT, for audiological problems including tinnitus and balance. However, formal hearing therapist training is no longer supported in the United Kingdom, with the specialization effectively declining steadily in numbers as audiologists are required to expand their scope of practice to take on their role. It is perhaps unrealistic and undesirable to train all audiologists in a whole package of CBT, and it is unclear which individual “counseling techniques”—whether they be components of CBT, ACT or other approaches—may be considered important for some audiologists to use.

Almost all English audiology departments also provide hearing aids, directive counseling, sound generators, and habituation therapies (in 89–99% of departments), and many individual audiologists practice more than one of these (Hoare et al. 2012). Care is not standardized, there are no national minimum training requirements, and there is no protocol for how audiologists should deliver CBT or counseling in the United Kingdom: audiologists rely on clinical experience and attending short courses if they have the opportunity to do so (Hoare et al. 2015). The survey by Hoare et al highlights that nearly half of U.K. audiology services have staff trained to deliver CBT and nearly half offer some form of CBT (Hoare et al. 2012). Furthermore, if only one third of audiology services have the access to refer patients to psychologists, then this situation represents an unmet care need. As a result, existing evidence does not directly inform current clinical practice in which audiologists are expected to undertake this responsibility in some form (Department of Health 2009). The present article relates to one stage of a larger research program to augment audiologists’ usual tinnitus care using components of psychological therapies alongside the provision of hearing aids, directive counseling, sound generators, and habituation therapies (Hoare et al. 2012).

Our recently published scoping review of psychological interventions for people with tinnitus cataloged over 100 individual components, including cognitive restructuring and defusion (Thompson et al. 2017). This provides a resource to inform audiologists’ usual care. Currently, there is no evidence in the literature to determine which components of psychological therapies would be acceptable to audiologists to deliver, and to patients to receive from audiologists. Here, we examine consensus using the Delphi survey technique (Helmer & Rescher 1960; Gordon & Helmer 1964). The Delphi survey method was developed to reach consensus of expert opinion. Specifically, the Delphi survey involves the presentation of sequential rounds of questionnaires to “panelists.” Traditionally, this begins with an open-ended question in the first round to enable panelists to generate ideas, with subsequent rounds asking panelists to rate and rerate these ideas after seeing panelist responses from previous rounds, until consensus is reached or a predetermined endpoint is reached. Therefore, the Delphi survey should provide a reasonable approach to meet our aim to determine which components of psychological interventions could inform audiologists’ usual care for people with tinnitus.

## MATERIALS AND METHODS

### Study Approvals

This study was granted approval by the North West—Preston NHS Research Ethics Committee (reference: 16/NW/0047) and Nottingham University Hospitals NHS Trust (sponsor).

### Panel Recruitment, Size, and Composition

Patients were eligible for participation if they self-identified as having received some form of psychological intervention for tinnitus from an audiologist, hearing therapist, or clinical psychologist. They were recruited from the National Institute for Health Research Nottingham Biomedical Research Centre research participant database and via response to advertisements disseminated by the British Tinnitus Association (BTA) at <http://www.tinnitus.org.uk/clinical-trials—how-to-find-out-more>. Clinicians were eligible for participation if they self-identified as practicing audiologists, hearing therapists, or clinical psychologist/psychotherapists who had any experience of delivering a psychological intervention for people with tinnitus and were recruited by contacting regional audiologist and hearing therapist networks and personal contacts.

The inclusion of patients, audiologists, hearing therapists, and psychologists was designed to consider different types of expertise, developed from different stakeholders resulting in different perspectives. Patients' responses would be influenced by their lived experience of tinnitus, whether they received psychological therapy, and what they thought was effective for them. Patient involvement in mental health care delivery can improve service accessibility and patient satisfaction (Crawford et al. 2002; Simpson & House et al. 2002). Clinicians' responses would more likely

reflect a broader set of components based on breadth of clinical experience and training. Audiologists' and hearing therapists' responses would be influenced by knowledge of the U.K. health-care system, the NHS, audiology services, and regular clinical experience with tinnitus patients and knowledge of their needs; hearing therapists would be expected to have a greater depth of knowledge about counseling techniques due to their specialized training compared with audiologists' short courses. Psychologists' responses would be based on a still greater depth of knowledge about the theory and evidence of psychological techniques. In addition to provider perceptions, clinical experience of people with and without tinnitus would be considered.

Recruitment commenced February 2016 and was completed March 2016. The expert panel consisted of 20 patients and 22 clinicians (14 audiologists, 6 hearing therapists, and 2 psychologists) who were recruited by purposive sampling, resulting in a total of 42 experts. An equal number of types of clinicians were targeted for recruitment; however, an insufficient number of psychologists consented to participate within the time allotted for recruitment. No panelist disclosed who received or delivered their care, so it is unknown whether any of the patients had consulted any of the clinicians on the panel.

### Survey Piloting and Administration

A three-round Delphi survey was developed (Fig. 1). Four members of the BTA users' panel reviewed survey rounds 1 and 2. The BTA users' panel is a voluntary group of people with tinnitus that routinely reads documentation produced by the BTA with a remit to determine face validity of the survey. Survey items were amended according to recommendations made by the users' panel and returned to them to confirm the acceptability

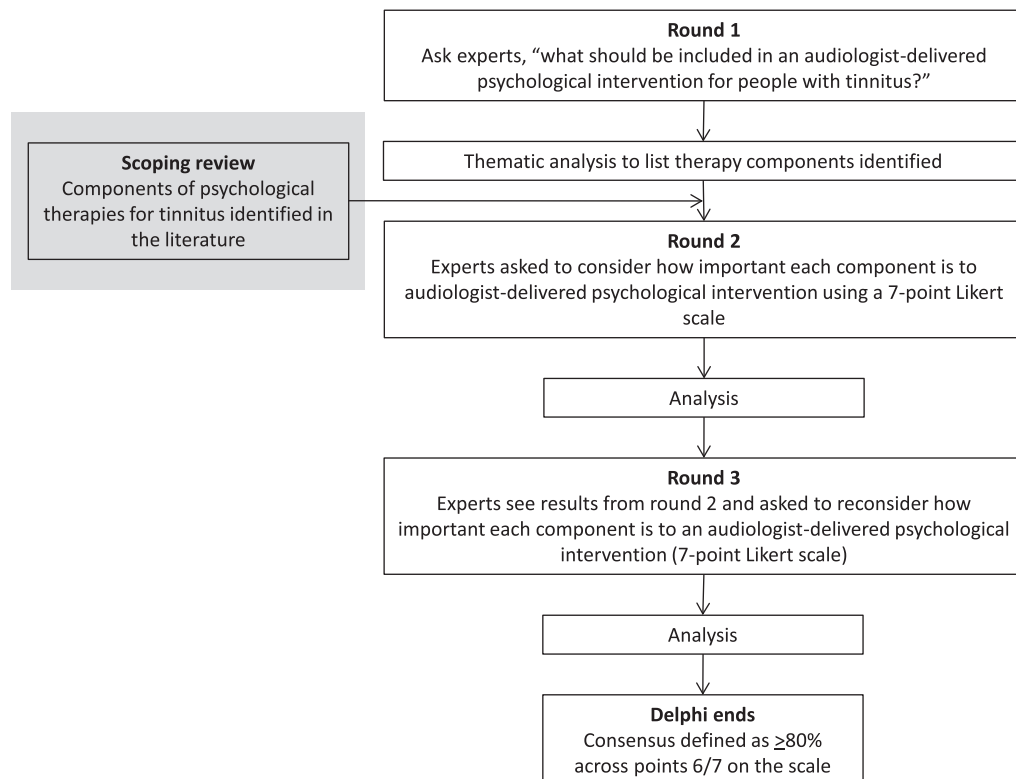


Fig. 1. Flow diagram of the Delphi survey process.

of any changes made. The survey was hosted at Bristol Online Survey (Bristol Online Surveys 2016), with round 1 commencing March 2016 and round 3 ending May 2016.

### Managing Attrition

To mitigate attrition, regular reminders to complete each survey round within the 2-week timescale (per round) were sent to all panelists simultaneously, containing the deadline and the option of an extension being granted on a case-by-case basis when extenuating circumstances were present. No requests were refused. Panelists were granted the option to complete the survey off-line, using Microsoft Word for survey presentation, sent via e-mail. Panelists who withdrew their participation were not replaced.

### Survey Round 1

All panelists were asked the question, “What in your opinion are the essential components of an audiologist-delivered psychological intervention for people with tinnitus?” They were also presented with the instruction to “list and describe these components.” We also surveyed patients on how long ago they received counseling or psychological support for tinnitus, which professional delivered it, and clinicians on job role and length of time in this role. Panelists were given free-text response fields to respond to these questions.

**Analysis of Round 1** • Qualitative data in response to the open-ended question on the essential components were analyzed using a modified template analysis (King 2012). Template analysis began with the identification of a priori themes and their respective components that were taken from an earlier scoping review (Thompson et al. 2017). These themes include tinnitus education, psychoeducation, evaluation, treatment rationale, treatment planning, problem solving, behavioral intervention, thought identification, thought challenging, worry time, emotions, social comparison, interpersonal skills, self-concept, lifestyle advice, acceptance and defusion, mindfulness, attention, relaxation, sleep, sound enrichment, comorbidity, treatment reflection, relapse prevention, and common therapeutic skills. Definitions for these themes for thematic analysis are presented in Table 1 (Supplemental Digital Content 1, <http://links.lww.com/EANDH/A358>).

Second, panelists' responses were coded to identify components concerning something that a clinician may actively deliver in a psychological intervention for people with tinnitus. Two independent coders performed these analyses, and any discrepancies were discussed to reach agreement. If the component was encompassed by a pre-existing theme it was added to it, otherwise, a new theme was added to the template.

### Survey Round 2

Panelists were presented with a list of components, derived from panelists' responses in round 1 and the results of the scoping review (Thompson et al. 2017). Components of complex psychological techniques were defined using Common Language for Psychotherapy (Marks & Fullana 2014) where available. Panelists were asked to rate each component on its importance as part of an audiologist-delivered psychological intervention, responding on a seven-point ordinal scale upon which selecting points 6 or 7 indicated that, in their view, the component was important to include in the intervention, whereas selecting 1 or 2 would indicate that the component

should be excluded. Panelists were informed, “for each item in this survey, if 80% of panelists select points 6 or 7 on the scale, we intend to include the corresponding component of therapy in a treatment manual for audiologists to deliver if indicated by patients. If 80% of panelists select points 1 or 2 on the scale, we intend to exclude the corresponding component of therapy from a treatment manual for audiologists to deliver if indicated by patients.” All items from round 2 were retained in round 3, irrespective of the level of agreement. No survey items in round 2 or 3 were mandatory: panelists were instructed to respond to all survey items unless they determined that they had no understanding of a given component, in which case they were asked not to respond to the item. Missing within-panelist data were not imputed.

**Analysis of Round 2** • Percentage response rates were recorded for each item in the survey. The percentage agreement of patient, audiologist, hearing therapist, and psychologist per survey item was recorded. Components reaching consensus were reported when 80% of all panelist responses were across points 1 and 2, or 6 and 7 on the seven-point ordinal scale.

### Survey Round 3

All panelists were presented with the same list of components as in round 2, with aggregated results indicating the preliminary level of agreement between patients and between clinicians on the importance of including each treatment component for each point of the seven-point response scale. Panelists were not presented with the individual responses of other panelists. Each panelist was also presented with his or her individual responses from round 2. Panelists were asked to reconsider their response to each item using the results from the previous round, responding again on a seven-point ordinal scale. Panelists were again instructed to respond to all survey items unless they determined that they had no understanding of a given component, in which case they were asked not to respond to the item.

**Analysis of Round 3** • Percentage response rates were recorded for each item in the questionnaire. The percentage of patient, audiologist, hearing therapist, and psychologist agreement per survey item was recorded. Components reaching consensus were measured where 80% of all panelist responses were across points 1 and 2, or 6 and 7 on the seven-point ordinal scale.

### Additional Analyses

Stability of panelists' responses between rounds 2 and 3 of the survey was measured by calculating weighted kappa ( $\kappa$ ) using R Studio (R Core Team 2016; Revelle 2016), where  $\kappa = 1$  would indicate absolute within-panelist agreement between rounds, and 0 would indicate that agreement between rounds is no better than that expected by chance.

Sensitivity analyses were carried out to reduce missing expert panelist data, imputing round 3 data for panelists who did not complete it using their round 2 data. Sensitivity analyses were also carried out in relation to the number and identity of components reaching consensus when data were limited to subgroups of panelists (patients, audiologists, hearing therapists, and psychologists). To explore the data while mitigating the under-representation of panelist subgroups due to limited recruitment, a weighted analysis was carried out on round 3

data. Clinician subgroups were given equal weight, with the overall number of clinicians given equal weight to patients.

## RESULTS

### Panelist Demographics and Response Rates

**Patients** • Patients received psychological therapy or counseling on (mean) average 2.44 years (SD = 33.357) before completing round 1 of the survey. A majority of patients on the panel received psychological therapy or counseling for their tinnitus within the past year (from 1 or more clinicians). Fourteen patients had received their therapy from an audiologist, 7 from a hearing therapist, 2 from a clinical psychologist, and 7 from a psychological therapist. Eight patients had seen a clinical psychologist or psychological therapist and an audiologist or hearing therapist. Two patients had seen an audiologist and hearing therapist but not a psychologist.

**Clinicians** • The mean clinical experience in panelists' respective professions was 14.09 years (SD = 7.698). Most clinicians had between 10 and 25 years of clinical experience in their respective roles. Of the clinicians, 14 were audiologists, 6 were hearing therapists (one of who withdrew their participation after completing round 1), and 2 were psychologists. Of the 2 psychologists on the panel, 1 reported their role as consultant clinical psychologist and the other as cognitive behavioral therapist.

**Response Rates** • Of the 42 panelists, 40 (95%) completed the round 1 questionnaire, 40 (100% [cumulative response rate]) completed round 2, and 39 (98% [cumulative response rate]) completed round 3. One hearing therapist and 1 patient withdrew their participation without completing round 2. One further patient dropped out without completing round 3.

By round 3, 149 of the 160 components had a response rate of greater than 94% of panelists. Ten components had a response rate of 92%, and one component had a response rate of 90%.

Complete response rates data are presented in Table 2 (Supplemental Digital Content 2, <http://links.lww.com/EANDH/A359>).

### Components Derived From Round 1

Panelists proposed 17 components that were not identified in Thompson et al. (2017) that they thought could inform audiologists' usual tinnitus care (Table 1). Of these, four formed a new theme named "support and resource signposting." This theme included the provision of written materials, suggesting the use of websites, ongoing support options after discharge, and homework review. One component "discuss past life experiences" did not relate to any predefined theme; it was specified as a theme independently.

### Consensus Reached in Round 2

Forty-three of 160 components reached consensus ( $\geq 80\%$  agreement) in round 2 to be considered important to include in a treatment manual for audiologists to deliver. No components reached consensus to be excluded.

### Consensus Reached in Round 3

Seventy-six components reached final consensus ( $\geq 80\%$  agreement) in round 3 to be considered important to include in a treatment manual for audiologists to deliver. These components are presented in Table 2 in descending order of percentage agreement. Another 84 treatment components did not reach consensus in round 2 (Supplemental Digital Content 3, <http://links.lww.com/EANDH/A360>). No components reached consensus to be excluded. Those components with the highest percentage of agreement to exclude from audiologists' usual tinnitus care include Gestalt techniques (51.35%) and social skills training (44.74%). Components that reaching greater than 10% agreement to exclude are presented in Table 4 (Supplemental Digital

**TABLE 1. Novel components proposed by panelists in round 1 of the Delphi survey**

Theme	Component
Tinnitus education	Provide information on the limbic system and how this information can be used to treat tinnitus*
Evaluation	Dispel misconceptions about tinnitus*
	Discuss tinnitus onset*
	Discuss tinnitus progression*
Treatment rationale	Enquire about the patient's suicide risk
	Engage in a cost-benefit analysis, considering both the advantages and disadvantages of the patient taking action or no action related to their tinnitus
Treatment planning	Enquire into whether the patient is currently undergoing psychological therapy elsewhere and incorporate experiences from treatment if applicable*
Comorbidity	Discuss any factors of anxiety that the patient displays*
	Discuss any factors of depression that the patient displays*
Common therapeutic skills	Engage in Socratic questioning by asking strategic questions to understand the patients' perspectives and help them work out solutions to their problems*
	Encourage the patient to talk about whatever they wish to bring to the session
	Engage in active listening, verbally restating the patient's statements, and non verbally (for instance, eye contact, body posture)*
Support and resource signposting (new theme)	Suggest appropriate websites that the patient can access*
	Provide information about ongoing support options after discharge*
	Provide the patient with written materials to take away*
Past life experiences (new theme)	Review the patient's homework from the previous session
	Discuss the patient's past life experiences that may still be bothersome

\*Components that reached consensus in round 3.

**TABLE 2. Percentage agreement of components considered absolutely essential to include in an audiologist-delivered psychological intervention for people with tinnitus**

Component	Overall (%)	Patient (%)	Clinician (%)	Audiologist (%)	Hearing Therapist (%)	Psychologist (%)
<b>Tinnitus education</b>						
14. Dispel misconceptions about tinnitus	100.00	100.00	100.00	100.00	100.00	100.00
5. Provide information on how tinnitus becomes a problem and how it is maintained	97.44	94.44	100.00	100.00	100.00	100.00
9. Provide information on habituation, the reduction in arousal after exposure to stimuli (such as tinnitus)	97.44	94.44	100.00	100.00	100.00	100.00
4. Provide information on the causes of tinnitus	91.89	94.12	90.00	92.31	80.00	100.00
10. Provide information on the difference between short-term and long-term consequences of tinnitus	86.84	94.44	80.00	84.62	60.00	100.00
13. Provide information on the limbic system and how this information can be used to treat tinnitus	84.62	94.44	76.19	78.57	80.00	50.00
12. Provide information on the National Tinnitus Association*	81.58	83.33	80.00	76.92	100.00	50.00
2. Provide information on the natural history of tinnitus (how tinnitus changes over time)*	81.58	77.78	85.00	84.62	100.00	50.00
<b>Psychoeducation</b>						
21. Provide information on psychological factors of tinnitus annoyance and (di)stress	100.00	100.00	100.00	100.00	100.00	100.00
19. Provide information on the difference between what triggers tinnitus and what maintains it	97.44	100.00	95.24	100.00	100.00	50.00
20. Provide information on coping skills and strategies to manage stress	97.30	94.12	100.00	100.00	100.00	100.00
17. Analyse stressful events and their effect on tinnitus	94.74	100.00	90.00	92.86	100.00	50.00
15. Provide information on psychological models of tinnitus and mental health and on the relationship between individual factors of tinnitus	92.31	94.44	90.48	85.71	100.00	100.00
16. Use explanations of tinnitus and mental health when managing the patient's tinnitus	92.11	100.00	85.00	76.92	100.00	100.00
<b>Evaluation</b>						
31. Discuss tinnitus impact	100.00	100.00	100.00	100.00	100.00	100.00
22. Ask the patient about and discuss their tinnitus noise	97.37	94.44	100.00	100.00	100.00	100.00
24. Ask the patient to discuss their coping strategies and experiences of using them	97.37	94.44	100.00	100.00	100.00	100.00
35. Discuss tinnitus onset	94.87	100.00	90.48	100.00	80.00	50.00
28. Enquire into tinnitus annoyance	94.74	94.44	95.00	100.00	100.00	50.00
29. Enquire into tinnitus and associated problems	94.74	94.44	95.00	92.86	100.00	100.00
36. Discuss tinnitus progression	94.74	88.89	100.00	100.00	100.00	100.00
33. Enquire about what triggers the patient's tinnitus-related distress and what maintains it	92.31	94.44	90.48	92.86	100.00	50.00
23. Ask the patient about their understanding of tinnitus and how it relates to other facets of their life	92.31	88.89	95.24	100.00	100.00	50.00
26. Enquire using open-ended questions, as opposed to closed questions that only require yes/no or short answers	92.11	88.89	95.00	92.31	100.00	100.00
27. Enquire into the patient's fears	89.74	94.44	85.71	85.71	100.00	50.00
25. Provide information on audiological assessment*	84.62	83.33	85.71	100.00	60.00	50.00
<b>Treatment rationale</b>						
38. Provide information about and discuss the present psychological intervention for people with tinnitus	100.00	100.00	100.00	100.00	100.00	100.00
41. Provide information about treatment options	94.87	100.00	90.48	92.86	100.00	50.00
39. Provide information on the treatment rationale	92.31	94.44	90.48	92.86	80.00	100.00
<b>Treatment planning</b>						
46. Discuss the patient's expectations of tinnitus	97.37	94.44	100.00	100.00	100.00	100.00
47. Discuss the patient's expectations of treatment	94.87	94.44	95.24	92.86	100.00	100.00
52. Enquire into whether the patient is currently undergoing psychological therapy elsewhere and incorporate experiences from treatment if applicable	86.84	88.89	85.00	84.62	100.00	50.00
49. Provide a clear treatment plan	84.62	83.33	85.71	78.57	100.00	100.00
<b>Behavioral intervention</b>						
56. Discuss fear and avoidance behaviors with the patient	84.21	88.89	80.00	84.62	80.00	50.00

(Continued)

TABLE 2. Continued.

Component	Overall (%)	Patient (%)	Clinician (%)	Audiologist (%)	Hearing Therapist (%)	Psychologist (%)
<b>Emotion</b>						
69. Identify and discuss the effect of the patient's tinnitus on their emotions	100.00	100.00	100.00	100.00	100.00	100.00
70. Discuss how to change the patient's emotions	83.78	88.89	78.95	75.00	100.00	50.00
<b>Lifestyle advice</b>						
84. Discuss how to change the patient's environment to increase or decrease situations in which tinnitus will be better as appropriate	84.21	83.33	85.00	76.92	100.00	100.00
<b>Relaxation</b>						
96. Provide information relaxation	91.89	94.44	89.47	92.31	100.00	50.00
97. Discuss relaxation	87.18	83.33	90.48	92.86	100.00	50.00
99. Encourage the patient to maintain regular practice of relaxation techniques*	81.58	77.78	85.00	85.71	100.00	50.00
<b>Sleep</b>						
112. Engage the patient in sleep hygiene (habits and practices that are conducive to good sleep)*	83.78	70.59	95.00	100.00	100.00	50.00
<b>Sound enrichment</b>						
119. Exposure of sound to manage hyperacusis	94.87	94.44	95.24	100.00	80.00	100.00
121. Advise the patient on noise abuse	89.74	94.44	85.71	85.71	80.00	100.00
114. Provide information and advice on hyperacusis (an extreme aversion and hypersensitivity to sounds that are generally not an issue to other people) and noise sensitivity	89.47	88.89	90.00	92.31	100.00	50.00
117. Discuss the effect of sound enrichment on cognitive factors	84.62	88.89	80.95	85.71	80.00	50.00
116. Engage in sound enrichment*	81.08	83.33	78.95	91.67	60.00	50.00
<b>Comorbidity</b>						
129. Discuss any factors of depression that the patient displays	94.87	94.44	95.24	100.00	100.00	50.00
122. Provide information and advice on hearing loss	94.74	94.44	95.00	100.00	100.00	50.00
124. Provide information on hearing-loss treatments	94.74	94.44	95.00	100.00	100.00	50.00
123. Engage the patient in a process of developing hearing tactics (practical behavioral and environmental changes to improve communication)	92.31	88.89	95.24	100.00	100.00	50.00
128. Discuss any factors of anxiety that the patient displays	91.89	88.89	94.74	100.00	100.00	50.00
125. Provide information about problems that occur alongside tinnitus	86.84	94.44	80.00	85.71	80.00	0.00
<b>Treatment reflection</b>						
137. Assess the success of therapy with the patient	97.37	94.44	100.00	100.00	100.00	100.00
133. Review therapy with the patient at the end of the treatment	97.22	100.00	94.44	91.67	100.00	100.00
132. Review therapy with the patient	94.59	94.12	95.00	92.31	100.00	100.00
138. Ask the patient to reflect on the current or previous session and to ask questions about it	92.11	94.44	90.00	92.31	100.00	50.00
135. Provide feedback to the patient	92.11	94.44	90.00	84.62	100.00	100.00
136. Revise action plan	89.47	88.89	90.00	84.62	100.00	100.00
139. Check the patient's understanding of information provided	89.19	94.12	85.00	84.62	100.00	50.00
130. Discuss the consequences of the patient's new behaviors and thoughts, coping strategies and any reasons they may hold for wanting to discontinue treatment	86.84	88.89	85.00	76.92	100.00	100.00
134. Review therapy with the patient halfway through treatment	80.56	82.35	78.95	84.62	50.00	100.00
<b>Relapse prevention</b>						
140. Advise on and plan relapse prevention with the patient	91.89	100.00	84.21	76.92	100.00	100.00
142. Discuss how to cope with relapse with the patient	89.19	100.00	78.95	69.23	100.00	100.00
141. Summarize treatment for relapse prevention	86.49	94.44	78.95	76.92	100.00	50.00
<b>Common therapeutic skills</b>						

(Continued)

TABLE 2. Continued.

Component	Overall (%)	Patient (%)	Clinician (%)	Audiologist (%)	Hearing Therapist (%)	Psychologist (%)
147. Demonstrate sincerity, sympathy, and empathy	100.00	100.00	100.00	100.00	100.00	100.00
148. The clinician should demonstrate competence and professionalism	100.00	100.00	100.00	100.00	100.00	100.00
149. Develop a trusting relationship with the patient	100.00	100.00	100.00	100.00	100.00	100.00
152. Encourage discussion between patient and clinician	100.00	100.00	100.00	100.00	100.00	100.00
153. Ask strategic questions to understand the patients' perspectives and help them work out solutions to their problems (Socratic questioning)	94.74	94.44	95.00	92.31	100.00	100.00
146. Offer verbal encouragement to the patient	92.11	94.44	90.00	84.62	100.00	100.00
151. Work with the patient's values and life goals	89.47	88.89	90.00	92.31	80.00	100.00
150. Allow therapeutic silences after discussions	86.84	77.78	95.00	100.00	80.00	100.00
155. Engage in active listening, verbally restating the patient's statements, and nonverbally (for instance, eye contact, body posture)	86.84	77.78	95.00	92.31	100.00	100.00
Support and resource signposting						
157. Provide information about ongoing support options after discharge	94.74	100.00	90.00	92.31	80.00	100.00
156. Suggest appropriate websites that the patient can access	92.11	94.44	90.00	92.31	100.00	50.00
158. Provide the patient with written materials to take away	91.89	94.44	89.47	84.62	100.00	100.00

Table subheadings represent themes taken from Thompson et al. (2017) scoping review.  
\*Components that did not reach consensus in weighted analysis.

Content 4, <http://links.lww.com/EANDH/A361>, in descending order of the percentage of agreement).

Weighted analysis of round 3 data (for each giving clinician subgroups equal weight, with the overall number of clinicians given equal weight to patients) also produced 76 components reaching consensus. However, six of these differed. Those additional components reaching consensus were as follows: 1, provide information on tinnitus terminology (80.16%); 64, identify and increase positive thoughts (83.94%); 71, normalize tinnitus by sharing other people's experiences of it (84.52%); 72, provide information about the likelihood of successful psychological therapy for tinnitus-related distress (80.16%); 120, advise the patient on masking (noise which drowns out the tinnitus) and the risks associated with it (82.01%); and 145, advise the patient on how to maintain practice of psychotherapeutic techniques (82.73%). Those components not reaching consensus in weighted analysis are highlighted in Table 2.

### Sensitivity Analysis

One patient completed round 2 of the survey but not round 3. When imputing this patient's data from round 2, 1 additional component, "Enquire about and provide information on attitudes and beliefs, their consequences and effect on tinnitus," would have reached consensus.

Including both patients and clinicians in the survey meant that importance ratings were informed from a number of different experiences and perspectives. By considering only patient responses, 17 components reached consensus to be included in psychologically informed usual care for tinnitus, which was not the case when including all data. These components were spread across 12 different themes, including evaluation, treatment rationale, treatment planning, behavior intervention, thought identification, social comparison, interpersonal skills, acceptance and defusion, sleep, sound enrichment, comorbidity, and relapse prevention, with no theme represented by more than

two components (Supplemental Digital Content 5, <http://links.lww.com/EANDH/A362>).

When considering only clinician responses, three components reached consensus that did not when including all data. Two of these three concerned sleep including information on its physiological function (overall = 73.68%; clinicians = 80%) and advice on changing the sleeping environment and consumption of food, drink, and medication (overall = 74.36%; clinicians = 80.95%). The third concerned identifying and increasing positive thoughts (overall = 78.95%; clinicians = 80%). When separating out clinician's data by profession, one other component reached consensus if only decided by audiologists, 30 for hearing therapists and 15 for psychologists (Supplemental Digital Content 5, <http://links.lww.com/EANDH/A362>). On average across components, the level of agreement increased by 24.31% (patients 18.16%, clinicians 4.65%, audiologists 6.24%, hearing therapists 20.60%, and psychologists 43.59%).

### Stability of Responses

Weighted kappa ( $\kappa$ ) between rounds 2 and 3 for averaged 0.67 (SD = 0.152) across the 160 components. For patients  $\kappa = 0.66$  (SD = 0.199), and for clinicians  $\kappa = 0.64$  (SD = 0.187) (Supplemental Digital Content 6, <http://links.lww.com/EANDH/A363>).

## DISCUSSION

Thompson et al. (2017) cataloged more than 100 individual therapy components reported in the literature on psychological therapies for people with tinnitus. The potential of this catalog to inform audiologists' usual tinnitus care is limited by the absence of weighing the efficacy of its constituent components; however, this Delphi survey identified an extensive inventory of components that a panel of patients, audiologists, hearing therapists, and psychologists agreed were important. The feasibility



of including all of these components in a single intervention would be questionable due to their large number. Because panelists were asked what they thought should be included in audiologist-delivered tinnitus with care without being limited by resource availability, whether those were resources of time, supervision, or training, the panelists specified an exhaustive list of strategies. As a result, in any relevant further research including the development of tinnitus care protocols, data from this Delphi survey should also consider trials examining the efficacy of the components described here.

The Delphi method was used as a means to move toward consensus across patients and clinicians and to reflect their fellow stakeholders' views. In terms of stability of panelist responses between rounds 2 and 3, the result of  $\kappa = 0.67$  indicated substantial agreement (Landis & Koch 1977) with some malleability of opinion after the presentation of the round 2 data. However, it was unclear whether this change in opinion between rounds may also have been due to chance or confounding variables. Limiting response periods for each survey round to 2 weeks may have mitigated this. The stability of both patient and clinician responses was approximately equivalent (with only 0.2 difference between mean average weighted kappa), indicating that on the whole, clinicians were no more influenced by the opinions of fellow clinicians and patients than patients were influenced by fellow patients and clinicians.

One of the few components with unanimous agreement to include in psychologically informed usual tinnitus care was to dispel misconceptions about tinnitus (no. 14), indicating that if nothing else, the patient should not leave with incorrect information. The extent to which this particular finding reflected concerns about poor understanding of tinnitus in the wider population could not be determined from these data. Whether this was the case could be examined in more in-depth interviews, preferably as part of a process evaluation of any trials including therapies comprised of any of the components considered essential from these data.

No components reached consensus to be excluded from psychologically informed usual tinnitus care although some components had higher levels of agreement in this direction than others. Perhaps reflecting the low level of evidence for Gestalt therapy (no. 62) in the literature (Thompson et al. 2017), its use received the lowest level of agreement to be included. Similarly, despite its past use, thought stopping (no. 60) (Henry & Wilson 1998) was among the components with the lowest level of agreement to include. This was consistent with evidence that using thought suppression as a coping mechanism would be associated with a paradoxical rebound effect, whereby the targeted thought becomes more intrusive (Aldao & Nolen-Hoeksema 2010; Aldao et al. 2010). However, a third of patients on the panel thought that it should be included in tinnitus care. In the absence of standardized tinnitus counseling in the United Kingdom, this highlights the importance of audiologists maintaining an up-to-date knowledge of the evidence base in relation to specific psychological techniques including those that paradoxically may have a negative effect on patients.

Components concerning neural networks, neurophysiological models of tinnitus, and the auditory system (nos. 7, 8, 6) did not reach consensus overall or by any subgroup of panelists. However, the provision of information specifically on the limbic system (no. 13) reached consensus overall, with more than 80% agreement by patient panelists. The component concerning the limbic system

specifically focused on “how this information can be used to treat tinnitus,” whereas those others concerning neurology and anatomy did not. Therefore, it may be the case that this “focus” influenced panelists to agree on its inclusion aside from the content of the information specifically on the limbic system. A post-Delphi focus group could explore such interpretations and is an area for further research. A survey of 147 audiology departments in the United Kingdom found that only two departments employed a clinician who had undertaken training in TRT (Hoare et al. 2015); Tinnitus Retraining Therapy (TRT) is not funded by the NHS in the United Kingdom. This finding reflected the low level of consensus for neuroanatomy and the neurophysiological model. Components concerning tinnitus education that reached consensus as essential to include were generally less concerned with neurology and anatomy, and more with etiology, maintenance, and progression (nos. 4, 5, 12). Six of the seven components of psychoeducation reached consensus, compared to eight of 14 for tinnitus education. This indicated the importance of audiologists possessing a good degree of knowledge of the psychology of tinnitus, rather than just knowledge of anatomy and neurology.

The only component from the behavioral intervention theme of components that reached consensus concerned the discussion of fear and avoidance behaviors. Paradoxically, despite agreement to include the provision of information on habituation after exposure (no. 9), consensus was not reached to include graded exposure therapy, which according to emotional processing theory essentially works by habituating the patient (Rachman 1980). Furthermore, despite associations made between tinnitus and anxiety and depression in the literature (Pinto et al. 2014), the use of techniques designed to address anxiety and depression, namely worry time, cognitive restructuring, behavioral activation, ACT, and mindfulness (nos. 88, 89, 90) all failed to reach consensus. Overall, this may indicate a lack of consensus on the importance of these specific psychotherapeutic techniques despite their efficacy (Lindberg et al. 1989; Henry & Wilson 1998). An alternative interpretation was that components did not reach consensus due to concern that the degree of competency to deliver them required extensive training that audiologists were unlikely to have completed. Another interpretation was that the components did not reach consensus due to a lack of understanding of what the components represent in practice—the panelists may have chosen not to respond if they did not understand the component, as directed in their instructions.

### Strengths and Limitations

The panel was comprised of patients and clinicians based in the United Kingdom. Therefore, the results predominantly reflect a western view of mental health within the context of U.K. audiology practice. As such, the results may not have equal import for other cultures and systems of care delivery. However, the components that were included from the scoping review of psychological therapies for tinnitus could be used by any clinician group in any country (Thompson et al. 2017), and this Delphi procedure could be replicated to inform other national tinnitus training programs that could extend the scope of practice for clinician groups in other nations.

The sensitivity analysis indicated that 15 components reached consensus in the psychologist subgroup of panelists but did not reach consensus in the whole panel. The additional

components reaching consensus between psychologists indicate a preference to expand audiologists' scope of practice further to other problems with relationships and patients' home life and to be prepared to discuss suicide risk. Furthermore, psychologists agreed that audiologists may conduct additional cognitive behavioral techniques with patients including problem solving and behavioral activation, involving the structured and gradual increase of pleasant, personally rewarding activities. Westin et al. (2008) provide some support for behavioral activation for tinnitus with their longitudinal analysis of tinnitus patients. Westin et al. found that the pursuit of day-to-day activities fully mediates between tinnitus distress at baseline and depression and quality of life 7 months later. Furthermore, psychologists agreed on the importance of warning patients about the risks associated with masking tinnitus. This opinion reflects evidence that control over background sound may increase tinnitus interference (Hesser et al. 2009). However, the recruitment of only 2 psychologists limited the breadth of knowledge called upon to reach this consensus and increased the risk of bias. Future research may challenge these findings with a different panel.

The benefit of having a range of views from different professional groups in the panel allowed for experts to approach the survey from different perspectives. For instance, the audiologist may be in a better position to consider how much time they may have in their practice to accommodate certain psychological techniques, while the psychologist may have a better understanding of the principles behind said techniques and their applicability to tinnitus. However, due to the low number of psychologists recruited, it is conceivable that such concerns received relatively little consideration here. This may account for the lack of cognitive behavioral techniques reaching consensus, with panelists favoring common therapeutic skills. Common therapeutic skills, those that are not specific to a particular model of psychological therapy, consistently reached consensus in this Delphi survey. The common factors theory of psychological therapies posits that much or all of the benefit of treatment is the result of considering components common to many of the different types of psychological therapy (Rosenzweig 1936). Common therapeutic skills include relationship factors, expectations, and goal setting (Wampold 2015). A number of components reaching consensus seem to map onto developing a therapeutic relationship between patient and clinician, such as demonstrating empathy, Socratic questioning, and active listening (for instance, through eye contact and body posture) (nos. 147, 153, 155). The Delphi panel also reached consensus on discussing the patient's expectations (nos. 46, 47) and providing a treatment plan (no. 49). Thus, patient and audiologist preference of common therapeutic skills rather than specific CBT or other techniques aligned with the common factors theory of psychological therapies, as far as concerns audiologist-delivered tinnitus care. However, there was some contradiction, with panelists not reaching consensus on collaborating with the patient on how to plan therapy and agreeing on goals together (nos. 45, 48). This seems to be in opposition to the principle of patient-centered care. However, this result may have manifested in response to current training and models of care followed by audiologists in contrast to psychologists. In the United Kingdom, while a clinical psychologist will undergo several years of training before lifelong continuing professional development in planning and delivering psychological therapies, audiologists do not have a standardized pathway for training in this respect, and what training does exist is typically limited to short courses (Hoare et al. 2015). The likely resulting disparity in competence may

make dynamic patient-audiologist decision-making problematic "in the moment" for audiologists without extensive further training. In contrast, flexible albeit largely predetermined modular care, in which a given presentation indicates a particular component of treatment, may be more manageable for audiologists.

Responses as to whether components were important to include were not mandatory because it could not be expected that each panelist's knowledge would encompass all that psychological interventions could offer, nor that all patients would recall everything about their past care. However, this approach risked increasing missing data because panelists were advised to avoid responding to components to which their expertise did not cover. Despite the risk, missing data were limited, preserving both the quantity and quality of data. This could suggest that the recruited clinicians possessed a good degree of knowledge on the subject matter and that patients demonstrated good recollection of their care, to the extent that they felt confident to respond, and that the definitions used for the components sufficed for this purpose.

## CONCLUSIONS

Many components of psychological therapies that are delivered by psychologists in tinnitus management may be useful to audiologists when they have responsibility for meeting patient need, such as in the United Kingdom. However, it is also the case that providers have much to learn from each other, within and across disciplines, as well as from patients, and any success in implementing guidelines in the United Kingdom may be of interest to policy makers, clinicians, and researchers, to inform international cross-pollination of ideas and health and care delivery. While there is a wealth of research on psychologist-delivered therapy for tinnitus, how effective any components of those therapies might be when delivered by audiologists is yet to be determined in clinical trials. Since there is as yet no evidence for the effectiveness of audiologist-delivered psychological interventions for tinnitus, current audiology practice should still consider referral on to clinical psychology where available and appropriate.

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