GETTING THE MEASURE OF TINNITUS:
Developing core outcome sets for clinical trials

Prof Deborah Hall

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British Tinnitus Association
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British Tinnitus Association
Unit 5 Acorn Business Park
Woodseats Close
Sheffield
S8 0TB

www.tinnitus.org.uk
info@tinnitus.org.uk
0114 250 9933

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Introduction

Tinnitus research continues to evolve. Whilst this is good news, it presents challenges. Tinnitus research varies widely in what is measured, how it is measured and what is reported. This makes it difficult to understand what treatments work, how they work and who for. This article describes the COMiT initiative. The group’s innovative approach to working collaboratively with people who have tinnitus, healthcare professionals and tinnitus researchers seeks to overcome these challenges by developing a short list of aspects of tinnitus, known as a ‘Core Outcome Set’ that will form a minimum standard for what should be measured and reported in all future trials of tinnitus treatments.

Coming together

In 2014, the EU funded a network of tinnitus experts to help drive progress in the field by bringing together people from the academic, clinical, patient-centred and commercial sectors, for four years. This network calls itself TINNET (the TINnitus NETwork). Although there is no direct funding for research activity, five working groups were established to develop standards on clinical practice, clinical trials, genetic studies, neuroimaging, and multi-centre data collection. For the past four years (April 2014 - March 2018), I have been chair of the working group focused on standards for outcome measurement in clinical trials, with co-chair Dr Alain Londero,
an ENT consultant at the Hôpital Européen Georges-Pompidou, Paris [1][2]. The group has 46 members from 17 EU countries, and has closely worked together through face-to-face meetings, teleconferences and e-communications.

The group’s ambition has been to answer the fundamental question: ‘How to do good clinical research to find effective treatments for adults with chronic subjective tinnitus?’ using rigorous and evidence-based methods for reaching consensus among a wide range of stakeholders.

We know that different people have very different ideas about what is the most important aspect of tinnitus to reduce or improve when deciding if a treatment for tinnitus has worked or not. But we also know that clinical trials of tinnitus treatments would be more effective if all studies across the UK and around the world measured the outcomes of a tinnitus treatment in the same way. Examples of outcomes include tinnitus loudness using a psychophysical matching procedure, or the ability to concentrate, sense of control, or impact on work, all measured using questionnaires.

A Core Outcome Set (COS) is a list of critically important outcomes which form a minimum set of assessments that should be measured and reported in every clinical trial. A COS would mean that investigators must report on the same core outcomes, whilst remaining free to collect and explore other outcomes too. Ideally, these COS should be of importance to patients as well as health professionals, and outcome instruments should be reliable, validated and responsive to treatment-related change [1][2].

Tinnitus treatments themselves are quite diverse and so in recognition of this the group — via the COMiT initiative — is developing three COS for sound-based, psychology-based and drug-based treatment strategies. If the same COS were used and reported for each family of intervention strategies then, for example, results from Nottingham could be easily compared with results from London or Berlin. And results collected today could be easily compared with results collected in the future.

To create the final COS for tinnitus will take many years of careful research [set out in a roadmap, Figure 1]. The research roadmap extends beyond the duration of the TINNET award that ends in Spring 2018, so the group has created a distinct identity for its work and has called itself the COMiT initiative (Core Outcome Measures in Tinnitus). The aim of COMiT is the same as the TINNET working group: to improve the quality of future clinical research by identifying a minimum standard for assessing how a tinnitus treatment has worked, and proposing standards for how they should be measured. COMiT published its first research study in 2016 [3]. This systematic review of journal articles and clinical trial
registrations found that over 60 different aspects of tinnitus and over 130 different tinnitus measurement methods had been reported in the past 10 years of clinical trials. Clearly this lack of consensus shows that there is work to be done to create a minimum standard.

In 2017, COMiT completed the Stage 1 research (Figure 1) [4]. Our starting point for this study was a long list of all the different aspects of tinnitus, developed with input from team members who were people with tinnitus. They applied their own personal experience of tinnitus to bring clarity and relevance to terminology used in the study and helped to create easy-to-understand plain language descriptions [5][6].

Three separate online consensus surveys were completed to identify how sound-, psychology- and drug-based tinnitus treatments should be commonly assessed before and after treatment [4]. In each survey, the same list was given to all participating international tinnitus experts (people with lived experience of tinnitus, healthcare practitioners, researchers, commercial representatives and funders of tinnitus research) and they were each asked to rate which outcomes they felt were critically important when deciding if a treatment for tinnitus has worked.

A wide range of people completed the online survey based on their experience with one or more of these treatment types. Overall, we succeeded in involving the global tinnitus community, with over 600 people taking part from over 40 countries worldwide.

From each online survey, participants agreed on between 17 and 24 different tinnitus-related problems to recommend to researchers as outcomes to be assessed in a clinical trial. These are listed in Figure 2. From a practical point of view however, these numbers are too many for investigators to measure in a clinical research study. Survey participants were invited to attend one of three consensus workshops (one for each treatment type). About twenty participants – people with lived experience of tinnitus and a range of professionals representing the different stakeholder groups – took part in each workshop to discuss the findings (see Figure 3). Workshops took place in September and October 2017. In each workshop, participants agreed that the list of recommended tinnitus assessments should be reduced to a more manageable number, creating a minimum set that will become international standards to be used in research.

This minimum set was selected by those attending the workshops on the basis that assessments are:
- directly relevant to patients with tinnitus, to the healthcare professionals giving the treatment and to the researchers designing the trial,
- directly relevant to how the treatment is supposed to be working, and
- are expected to be very sensitive to change during the treatment.

Figure 2:
List of all critically important outcomes that were agreed upon in the online survey by at least 70% of the participants in each stakeholder group (i.e. people with lived experience of tinnitus, healthcare practitioners, researchers, commercial representatives and funders of tinnitus research). Note that there is a separate list for each treatment strategy, reflecting the diversity of approaches.
Figure 4 reports our COS recommendations from the COMiT’ID study. These are our minimal reporting standards which will enable findings to be compared across studies. Investigators will always be free to add other assessments to their clinical trial design, if they wish.

Our next steps will be to define exactly what each of the assessments means to the community so that we can make recommendations on how they should be measured. Future efforts will therefore be pairing these selected outcome domains with suitable outcome instruments.

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References


