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Seeking Help for Tinnitus and Satisfaction With Healthcare Providers Including Diagnosis, Clinical Services, and Treatment: A Scoping Review

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Abstract

The objective of this scoping review was to describe the extent and type of evidence related to seeking help for tinnitus and satisfaction with healthcare providers including diagnosis, services and treatments along the clinical pathway. The selection criteria were adults aged 18 and over with tinnitus who sought help and where patient satisfaction with healthcare providers was reported. Online databases MEDLINE (OvidSP), Embase (OvidSP), PsycINFO (OvidSP) and CINAHL plus (EBSCO) were searched for original studies in English. The search had no date limit. Twenty-one records were eligible for data extraction. Studies reported that the most common healthcare providers seen were general practitioners, ear, nose and throat specialists and audiologists. Depression and tinnitus severity were related to an increase in the number of times help was sought and the type of healthcare provider seen may also impact patient satisfaction. The majority of participants were unlikely to receive a referral to a specialist at the initial GP consultation. Although there is limited research in this area, help-seekers for tinnitus were generally dissatisfied and reported negative interactions with healthcare providers. However, once in a specialised tinnitus clinical setting, studies reported that most help-seekers were satisfied and had positive interactions with healthcare providers.

Keywords

clinical pathway, health professionals, help-seeking, patient expectations, tinnitus

Introduction

Tinnitus is the sensation of noise perceived in one or both ears or inside the head where the sound has no external source, and reported as ringing, buzzing, humming, clicking or other sounds (Baguley et al., 2013; Baguley, 2002). Tinnitus can be temporary, acute or chronic, is often a symptom of an underlying medical condition, and can have a significant influence on the quality of life of those who are affected (Ahmad & Seidman, 2004; Baguley et al., 2013; Crummer & Hassan, 2004; Davis & Morgan, 2008; Han et al., 2009; Newman et al., 2011; Tunkel, et al., 2014). Tinnitus is defined as clinical when the sensation of noise lasts at least 5 minutes and occurs more often than once a week (Dauman & Tyler, 1992) and defined as chronic when experienced for at least three months (De Ridder et al., 2021). The most common form of reported tinnitus is subjective tinnitus (Baguley et al., 2013; Langguth et al., 2013). If the sound of tinnitus can be heard by others, it is known as objective tinnitus. Objective tinnitus is rare and may be vascular in origin (Baguley et al., 2013; Crummer & Hassan, 2004; Langguth et al., 2013). The experience of tinnitus is often described as heterogeneous and this can complicate assessment (Baguley et al., 2013). Clinical assessment requires investigation as to whether a hearing loss or other medical issue is contributing to the tinnitus as well as identification of any accompanying psychological symptoms to ascertain the appropriate treatment (Crummer & Hassan, 2004; Newman et al., 2011). These aspects may not be established at the initial consultation in which case referral to a specialist may be indicated (Crummer & Hassan, 2004). The prevalence of chronic tinnitus has been reported to be approximately 10–15% of the population and even higher for occasional tinnitus (22–32%) (Adrian, D & El Refaie, 2000).

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A systematic review of the prevalence of tinnitus shows that prevalence varies with age (18–44 years 9.7%, 45–64 years 13.7% and 65 and over 23.6%) and that globally there are approximately 740 million tinnitus-afflicted people, with over 120 million of these having severe tinnitus (Jarach et al., 2022). However, the number of people who seek help for tinnitus is much lower (Adams et al., 1999; Brown et al., 1990; Lee et al., 2018; Newall et al., 2001; Redmond, 2010).

Help-seeking can be defined as a problem-focused, planned behaviour involving an interpersonal interaction with a healthcare provider (Cornally & McCarthy, 2011). A help-seeker is someone who has identified a problem or need, believes that external intervention is required and actively seeks help (Cornally & McCarthy, 2011). Patient satisfaction can be assessed as a measure of the quality of services provided by healthcare providers, and can identify deficiencies and potential improvements (Goldstein et al., 2000; Verbeek, 2004). Although there is not a globally accepted practice for measurement of patient satisfaction, a study reviewing patient satisfaction research found that the strongest positive influences of patient satisfaction were the quality of healthcare provider's interpersonal skills, their competence, the physical environment of the facility, accessibility, continuity of care, hospital characteristics and care outcomes (Batbaatar et al., 2017).

The low level of help-seeking for tinnitus may be because the tinnitus is not bothersome or problematic enough to require seeking help. In a population study of middle-aged adults (n = 5107) of those who reported tinnitus (n = 1154, 22.6%), about a third (32.4%) reported that tinnitus had an occasional effect on daily life, whilst only a small number (8.9%) reported a frequent or constant effect on daily life (Stegeman et al., 2021). Research into patient care for tinnitus indicates that a low confidence in the ability to resolve or manage tinnitus may also prevent seeking help, (Smith & Fagelson, 2011) and factors such as confidence, knowledge, having a positive approach and support from a significant other may encourage help-seeking behaviour for tinnitus or a hearing issue (Meyer et al., 2014; Smith & Fagelson, 2011).

To understand what factors may motivate someone with tinnitus to seek help, studies comparing help-seekers with non-help-seekers provide some insight. Help-seekers are more likely to have significantly more combined tinnitus sounds, more non-fluctuating tinnitus and significantly higher psychological variables, concentration difficulties, irritability and sleep disturbances (Hallberg & Erlandsson, 1993). Help-seekers report more severe noise-induced hearing loss, more psychological symptoms and reduced coping with tinnitus, as well as significantly lower tolerance to noise, indicating a lack of inhabitation to the tinnitus noise (Attias et al., 1995). Help-seekers report a greater amount of somatic complaints including problems with sleep and concentration, and are also more likely to have higher levels of tinnitus-related distress (Scott & Lindberg, 2000). Help seekers more likely report hearing loss, hyperacusis and comorbidities such as dental problems, depression, balance problems or vertigo (Rademaker et al., 2021; Stegeman et al., 2021).

It has been acknowledged by both researchers and clinicians that health services for tinnitus requires significant improvement (Hoare & Hall, 2011; Langguth et al., 2011; Martinez et al., 2015; Searchfield, 2011). Tinnitus is like other 'invisible' chronic health issues such as back pain, insomnia and migraine (Benca, 2005; Bigal et al., 2008; Verbeek et al., 2004) in that they are self-reported. Dissatisfaction with the perceived lack of information has been consistently reported by those who experience these types of chronic conditions (Benca, 2005; Bigal et al., 2008; Verbeek et al., 2004). Tinnitus, in common with these other chronic health issues, is often associated with co-occurring health conditions and psychological symptoms, some of which compound the tinnitus or complicate treatment (Stegeman et al., 2021).

A better understanding of help seeking by those with tinnitus, and the satisfaction with services and treatment is required. A preliminary search of MEDLINE through the Cochrane Database of Systematic Reviews and JBI Evidence Synthesis was conducted and no published or planned systematic reviews or scoping reviews on this topic were identified. The objective of this scoping review was to assess the extent of the literature on the nature of seeking help for the diagnosis and treatment of tinnitus, and the satisfaction with clinical services provided.

Method

This scoping review was based on the PRISMA-ScR extension for scoping reviews (Tricco et al., 2018). This is guided by the scoping review protocols by Arksey and O'Malley (Arksey & O'Malley, 2005) and Levac, Colquhoun, and O'Brien (Levac et al., 2010) which suggests following five stages (i) identifying the review question, (ii) identifying the relevant studies, (iii) study selection, (iv) charting the data, (v) collating, summarizing and reporting the results.

Stage I: Identifying the Question

The scoping review question was "what is known about seeking help for tinnitus and the satisfaction with healthcare providers, including diagnosis, clinical services, and treatment?" this question guided the analysis of the findings.

Stage II: Identifying the Relevant Studies

Eligibility Criteria. The inclusion criteria were original articles published in English that included adults aged 18 years and over (no upper age limit) with frequent or chronic tinnitus seeking help for tinnitus and the satisfaction with the clinical experience including diagnosis, clinical services, and treatment along the tinnitus clinical pathways in different settings and countries. The scoping review considered descriptive observational study designs, quantitative data and studies

using qualitative data including grounded theory and interpretative phenomenological analysis. The search was not date limited.

Search Strategy. The first reviewer (NC) worked with research librarians specialising in health and medical sciences to develop a search strategy on the topic. An initial limited search of MEDLINE (OvidSP) was undertaken to identify articles on the topic. This was followed by identifying the text words contained in the titles and abstracts of relevant articles, and the index terms used to describe the articles were both used to develop a full search strategy. The next stage was applying the search terms to online databases. The search strategy was adapted for each included database and/or information source. The search term 'tinnitus' was used with the following combinations of 'seeking' or 'sought', 'satisfaction' or 'dissatisfaction', 'experience' or 'healthcare' or 'services'. Using these search terms, the searches for each term were conducted separately and then search results were combined using a comprehensive search strategy with both free-text words and index terms for MEDLINE (OvidSP), Embase (OvidSP), PsycINFO (OvidSP) and CINAHL plus (EBSCO) to locate both published and unpublished studies, see Table 1 for the online database search strategy example.

Finally the reference lists of all studies retrieved for critical evaluation for the review were searched for studies not yet identified and websites of relevant organisations were searched, or they were contacted to identify other public documents. The initial searches were conducted in September 2021. These searches were repeated in August 2022 to check for additional papers. A research librarian and the second reviewer (RE) checked over the final search terms used for the electronic searches. The second reviewer also checked over the online searches made whilst a third reviewer (STQ) tested the search strategy in online searches independent from the first reviewer, second reviewer and the research librarian. Any issues were resolved through discussion. (See Supplementary Table of full online database search strategy).

Table 1. Online Database Search Strategy Example.

Database	Search Term
MEDLINE (Ovid) (PubMed)	#1 tinnitus/#2 "tinnitus.tw." #3 #1 or #2 #4 "seeking.tw." #5 "sought.tw." #6 #4 or #5 #7 "satisfaction.tw." #8 "dissatisfaction.tw." #9 #7 or #8 #10 #3 and #6 #11 #3 and #9

Stage III: Study Selection

Following the search, all identified citations were collated and uploaded by the first reviewer into the online for database Rayyan (Ouzzani et al., 2016) and the duplicates were removed. The titles and abstracts were screened with the blind on so that decisions and labels of any collaborator are not visible to others for assessment against the inclusion criteria. Any uncertain records were discussed with the second reviewer. Potentially relevant sources were retrieved in full and imported into the online database with the blind maintained. The third reviewer assessed the recovered records by the first reviewer uploaded into the online database against the inclusion criteria independently from the first and second reviewers. Any disagreements that arose between the reviewers at each stage of the selection process were resolved through discussion. The results of the search and the study inclusion process are reported in full in this scoping review and presented in (PRISMA-ScR) flow diagram (Figure 1) (Liberati et al., 2009; Tricco et al., 2018).

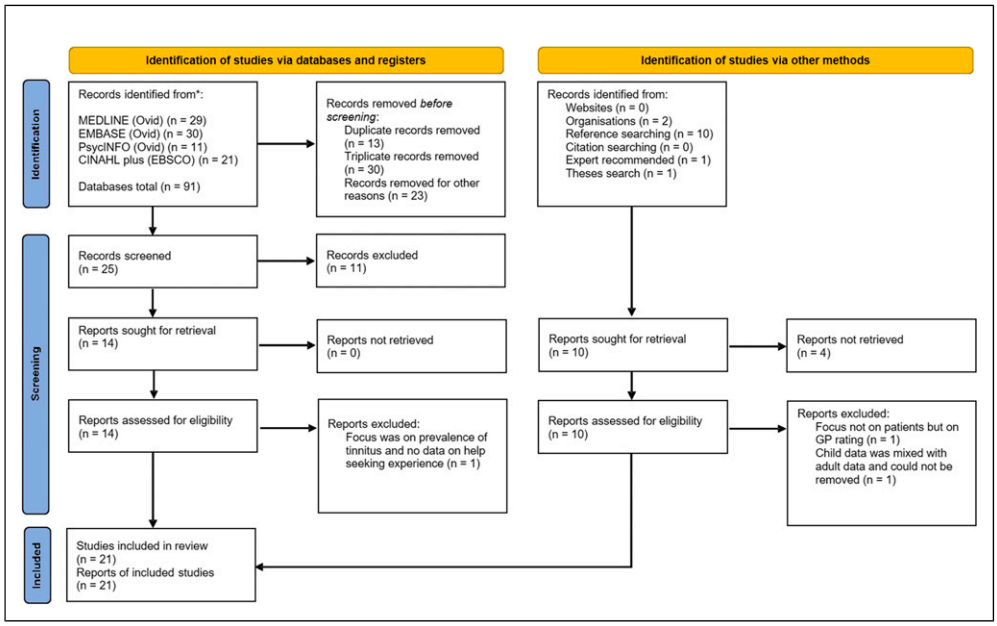
Stage IV: Charting the Data

The first reviewer extracted and tabulated all the data from each individual record and summarised the following characteristics, namely author(s)/year, study aim, title, study design, study setting (including country), study population and sample size. Another tabulation was created with further details such as presence of tinnitus and other characteristics, help-seeking and the health professional(s) seen, treatments, patient satisfaction (if reported). A short summary and key outcomes of each study were also included. The second reviewer checked the data in the tables. In the piloting process of data extracting it was decided that the studies would be sorted into categories of type of study sample reported in the study as the most suitable way to analyse and present the key findings. The third reviewer then performed an audit by selecting three of the included studies in the review to check the data extraction process by the first reviewer. Any issues with data extraction or errors were discussed. Any significant errors or disputes, this process was repeated with a different set of three papers until a decision was reached.

Stage V: Collating, Summarising and Reporting Results

The extracted data of the characteristics and key findings of the included studies were tabulated into four categories under type of study sample: population sample, self-selected sample, clinical/cohort sample, and interviews/qualitative sample. A narrative summary of the results was written to accompany the table which used descriptive statistics on the findings based on the categories above and including the table categories measures for help-seeking or patient satisfaction, help-seeking rate, health professional seen and satisfaction, treatment rate, health professional

Figure 1. Flow diagram details search process and count of included and excluded records of each stage of the review.



seen and treatment effectiveness/satisfaction. An overall summary of the results of the reviewed papers was based on the categories covered above.

Results

The number of records identified from the initial search of the databases was 91. After removing duplicates or triplicates and removing unsuitable records, 25 records were screened. From this screening, 14 records were sought for full text retrieval, and 13 records were selected to be included in the scoping review. After searching the references of the 13 retrieved records, 10 more records were identified. From searches of tinnitus and hearing organisations two records were identified and another record was identified by the research librarian. Of these, nine records were retrieved for screening and seven records were included in the scoping review. Further searches of reference lists in records already identified took place and any records deemed suitable were included for screening. A final search on Google Scholar for theses on the topic retrieved a Master's dissertation, which was included in the scoping review.

A total of 21 studies were reviewed, 14 of which were peer reviewed articles, one was an original research article reviewed by an editorial advisory board and editorial staff, four were reports, one a Master's dissertation and one an abstract. Four types of samples from the studies were identified, there were two population sample studies, seven self-selected sample studies, one study with a population sample and a self-selected sample, five clinical/cohort sample studies and six smaller self-selected sample studies using interviews/qualitative approach. The settings were medical centres, specialised tinnitus clinics, hospitals, and tinnitus care services in urban, suburban, and rural centres. Specialised tinnitus clinics can be multidisciplinary having access to specialists e.g. ENTs, audiologists, hearing aid providers and assessments for tinnitus using validated surveys and using tailored tinnitus treatments, psychological support or counselling. (Aazh et al., 2016; Goldstein et al., 2015; Sanchez & Stephens, 2000). The studies were conducted in Australia, Canada, Ireland, New Zealand, Northern Ireland, Scotland, Sweden, UK, USA, and Wales (Table 2).

Healthcare Providers Seen

Most of the studies reported help-seekers seeing either a general practitioner (GP) also known as a doctor or a primary care physician (15), ear, nose and throat specialist (ENT) also known as an otolaryngologist (13), or an audiologist (14). Others seen were health professionals offering psychological care or support (psychologist, counsellor or psychiatrist) (8), hearing therapist (7), nurse (3), audio vestibular physician (2), complementary therapist (2), specialist – not defined (2) and a physical therapist (physiotherapy) (1).

Measuring and Reporting Satisfaction

Most of the studies reported on the patient satisfaction of health professionals (19) and on the treatment effectiveness or satisfaction (13). The studies also reported on either referrals, services, procedures, and treatments offered or discussed with health professionals or the treatments tried by help-seekers (7). In this review one study was reported to use validated surveys to assess patient satisfaction for diagnoses and treatment. The surveys were The Patient Satisfaction with Communication (PSC) survey (Schofield et al., 2003) for diagnosis and the Functional Assessment of Chronic Illness Therapy–Treatment

Table 2. Summary of Reviewed Studies.

Study (including Author, Year, Sample Type, Sample Size, Setting, Description, Cohort Characteristics and Key Outcomes)	Measures for Help-Seeking or Patient Satisfaction	Help-Seeking Rate, Health Professional Seen and Satisfaction	Treatment Rate, Health Professional Seen and Treatment Effectiveness/Satisfaction
Sindhusake et al., 2003	Survey questions	Help seeking rate 37%	Treatment rate 6%
Population sample *n* = 2015 older adults in Blue Mountain study NSW, Australia		Health professional seen 65.4% GP 25.6% otolaryngologists (ENT) 5.2% audiologist 1.9% hearing aid provider 2.8% unsure	Health professional seen 28.6% GP 37.1% otolaryngologists (ENT) 11.4% audiologists or hearing service provider 8.6% other
Cohort characteristics Adults with tinnitus *n* = 602 (30.3%) 16% tinnitus extremely annoying 15% sleep disturbed 18% distressed by tinnitus Higher rates of hearing loss were found in those reporting tinnitus		Satisfaction n.a.	Treatment effectiveness/satisfaction 66.7% of the majority of those who had treatment reported that it was ineffective. Of those that had treatment the following were reported as effective: 21% Medication 3% Hearing aids 3% Acupuncture 6.1% Relaxation
Key outcomes Around a third of adults sought professional help for mild to annoying tinnitus, most saw the common health professionals seen for tinnitus however, for the majority who sought help had no treatment and for those that did the majority reported it as ineffective			
Bhatt et al., 2016	Survey questions	Help seeking rate 49.5% discussed with physician/GP	Treatment rate 84.8% never tired any treatments discussed. Treatments listed in AAO-HNSF guidelines and treatments not in guidelines were discussed with the physician. Treatments in guidelines: 45.4% medications 9.2% hearing aids 7.8% nutritional supplements 6.7% stress reduction methods 4.0% music treatment 3.0%, tinnitus retraining therapy 2.8% biofeedback therapy 2.6% wearable masking device 2.3% non-wearable masking device, 0.2% CBT 83.8% discussed all treatments Treatments not included guidelines: 0.3% psychiatric therapy 1.2% surgical transection of auditory nerve 3.9% alternative medicine 29.5% other 34.9% discussed all
Population sample *n* = 75,764 adults in USA		Health professional seen Physician/GP	Health professional seen Physician/GP
Cohort characteristics 9.6% reported tinnitus 7.2% big problem 41.6% small problem		Satisfaction n.a.	Treatment effectiveness/satisfaction n.a.
Key outcomes Less than half of the participants with tinnitus discussed it with a physician. Around half of physicians (45.4%) offered medications for tinnitus management; hearing aids, wearable and non-wearable devices and CBT were also discussed. The majority of patients with tinnitus did not avail themselves of treatments discussed with the treating physician. The US prevalence of tinnitus is approximately 1 in 10 adults, who were typically not treated in accordance with guidelines			
Carmody, 2016	Survey questions	Help seeking rate 60% self-selected sample 43.5% population sample	Treatment rate Less than 30% of help-seekers from both samples combined were given treatment and many sought treatment again after the initial treatment

(continued)

Table 2. (continued)

Study (including Author, Year, Sample Type, Sample Size, Setting, Description, Cohort Characteristics and Key Outcomes)	Measures for Help-Seeking or Patient Satisfaction	Help-Seeking Rate, Health Professional Seen and Satisfaction	Treatment Rate, Health Professional Seen and Treatment Effectiveness/Satisfaction
Self-selected sample Perth, Western Australia, Australia	Validated surveys used for patient satisfaction. The Patient Satisfaction with Communication (PSC) survey for diagnosis and the Functional Assessment of Chronic Illness Therapy–Treatment Satisfaction–General (FACIT-TS-G) survey for treatment	Health professional seen Self-selected sample 27.8% GP 27.8% audiologist 33.3% ENT	Health professional seen Self-selected sample 7.8% GP 8.9% audiologist 7.8% ENT
Population sample and self-selected sample n = 1004 in Busselton Health Study, Western Australia		Population sample 43.9% GP 31.6% audiologist 14% ENT	Population sample 1.8% GP 1.8% audiologist 3.5% ENT Each health professional type provided less than 10% of treatment to both samples
Cohort characteristics Self-selected sample (cohort 1), adults with tinnitus n = 150 Population sample (cohort 2); adults with tinnitus n = 131 Differences between the samples for tinnitus characteristics, help-seeking, seeking more than one treatment, tinnitus distress, and health status		Satisfaction 65.5% of the self-selected sample and 60% of the population sample were dissatisfied with their initial diagnosis. No significant differences were found between patient satisfaction (diagnosis and/or treatment) for both cohorts for type of cohort, sex, hearing loss, medication, health provider seen, anxiety, depression, tinnitus distress or health status, nor was diagnosis satisfaction linked to treatment satisfaction	Treatment effectiveness/satisfaction 66.7% self-selected sample and 33.3% population sample were dissatisfied with their initial treatment
Key outcomes The majority of help-seekers reported low levels of satisfaction with healthcare providers for their diagnosis of tinnitus and most did not have treatment			
George and Kemp, 1991	Survey questions	Help seeking rate 85%	Treatment rate 40% Of those who had treatment: 7% used a tinnitus masking device 28% used hearing aid, radio or Walkman to mask tinnitus as their own coping strategy. 60% offered no treatment and told 'learn to live with it
Self-selected sample New Zealand		Health professional seen 76% GP 42% audiologist 65% ENT 28% hearing aid specialist On average 2.7 different kinds of health professional were seen There was a significant positive correlation of 0.48 with the number of health professionals seen and (tinnitus) problem index score. Respondents depressed about their tinnitus saw significantly more health professionals (M = 3.7) than those who did not (M = 2.5) Tinnitus association members saw more health professionals (M = 3.27) than non-members (M = 2.54)	Health professional seen n.a.
Cohort characteristics Adults with tinnitus n = 338		Satisfaction 60% of those that sought help reported healthcare professionals were helpful and sympathetic	Treatment effectiveness/satisfaction 10% reported being successful in reducing or eliminating their tinnitus. 49% reported ineffective treatments in reducing or eliminating their tinnitus or helping them to manage it
Key outcomes Those who sought help often sought more than one health professional, and more if they were depressed by their tinnitus. Most who sought help were seeing the typical tinnitus health professionals, however often not offered treatment and told learn to live with it. Most health professionals were reported to be helpful ans 50% of treatments were effective			
Wray et al., 2017	Survey questions	Help seeking rate n.a.	Treatment rate n.a.
Self-selected sample United Kingdom		Health professional seen GP	Health professional seen n.a.

(continued)

Table 2. (continued)

Study (including Author, Year, Sample Type, Sample Size, Setting, Description, Cohort Characteristics and Key Outcomes)	Measures for Help-Seeking or Patient Satisfaction	Help-Seeking Rate, Health Professional Seen and Satisfaction	Treatment Rate, Health Professional Seen and Treatment Effectiveness/Satisfaction
Cohort characteristics Adults with tinnitus *n* = 928		Satisfaction 53% were unsatisfied with their GP's response 92% of these GP was 'dismissive or unsympathetic', or 'didn't have enough knowledge.'85% were not offered any further support. 75% were referred to ENT or audiology. Of those, 88% had to wait up to four months for an appointment. While waiting for an appointment to ENT or audiology 48% reported tinnitus had a 'moderate' or 'severe impact' on their quality of life during that time	Treatment effectiveness/satisfaction n.a.
Key outcomes The majority of help seekers were unsatisfied at primary care level (GP). Participants reported experienced long wait times to specialised tinnitus care with no further support from GPs and for almost have half their tinnitus further impacted their quality of life whilst they waited for specialised tinnitus care			
Husain et al., 2018	Survey questions	Help seeking rate 96%	Treatment rate 91.7% reported on treatments that were either offered, discussed and tried by patients: 27% advice/reassurance 23% medications 21.7% information leaflets 20.9% amplification 16.5% acoustic devices 14.3% recommendations or information regarding diet 12.6% stress management 30% no treatments tried
Self-selected sample United States		Health professional seen 43.5% GP 70.4% audiologist 70.0% ENT 5.2% nurse 11.7% psychological support 8% not reported	Health professional seen n.a.
Cohort characteristics Adults with tinnitus *n* = 230 Audiologists, *n* = 68		Satisfaction How effectively did the provider (listed above) manage to treat tinnitus? 56.3% not at all effectively 26.3% not very effectively 80.3% advised that "nothing can be done" 81.4% uniformed where to find additional information about tinnitus	Treatment effectiveness/satisfaction 48.7% not at all successful 30.1% not very successful Participants who rated their treatment outcome highly more often rated the effectiveness of their provider more positively as well. Differences in how patients and audiologists defined treatment success. Audiologists defined success as decreased awareness (77%) and stress/anxiety relief (63%) and patients sought reduction of tinnitus loudness (63%), and elimination of tinnitus (57%). Both groups agreed that supplying more information regarding tinnitus is helpful. When patients were asked "how effectively is your healthcare provider able to treat or manage your tinnitus?" 82.6% of respondents replied, "not at all effectively" or "not very effectively." Only 3.5% thought that their tinnitus had been managed "very effectively" or "extremely effectively."
Key outcomes Most participants were advised that nothing could be done and they were not given information about tinnitus; Healthcare provider management and treatment was rated as ineffective. There was a marked difference in how audiologists' rated themselves as opposed to the patients' ratings regarding the outcomes for tinnitus management			

(continued)

Table 2. (continued)

Study (including Author, Year, Sample Type, Sample Size, Setting, Description, Cohort Characteristics and Key Outcomes)	Measures for Help-Seeking or Patient Satisfaction	Help-Seeking Rate, Health Professional Seen and Satisfaction	Treatment Rate, Health Professional Seen and Treatment Effectiveness/Satisfaction
McFerran et al., 2018	Survey questions	Help seeking rate 71.0% had the initial consult within a year of tinnitus onset, of these 44.5% were within three months of initial tinnitus presentation. 76.6% were offered referral to secondary care after one or more GP appointments	Treatment rate Interventions and services were offered from healthcare providers listed as follows: GP 10.7% information provided 76.6% referral to secondary care 55.4% referral to ENT or Audio Vestibular Medicine (AMV) physician 28.5% referral to audiology 4.5% referral to ENT or AVM or audiology 20.1% medication prescribed 3.4% GP follow up appointment 19.5% none (no intervention offered) 2.8% hearing test at GP 1.0% dewaxing 1.1% referral to GP with ENT interest 0.2% referral to high street servicer 0.6% MRI arranged at a clinic Audiology: 66.67% received written information 35.19% sound therapy plus education 28.52% listening strategies 22.96% relaxation 10.74% CBT 8.89% mindfulness mediation 7.04% group education. Devices within audiology 24.07% received one hearing aid 34.44% two hearing aids 33.70% white noise generators 10.75% combination hearing aid device (hearing aid with a sound generator 13.70% pillow speakers 12.50% relaxation. ENT or Audio Vestibular Medicine (AMV) physician 90.1% audiometric assessment and or tympanometry performed 59.2% MRI scan 11.9% prescription drugs Less common services being a CT scan, ultrasound scan, blood test, vestibular function testing, brainstem evoked response audiometry, removal of wax and insertion of ventilation tube. Psychological support 7 had CBT, 3 mindful meditation and 4 both CBT and mindfulness meditation, 10 had non-specified psychological support
Self-selected sample United Kingdom		Health professional seen GP, *n* = 936 Audiologist, *n* = 270 ENT/audio vestibular medicine (AMV) physician, *n* = 294 Hearing therapist, *n* = 114 Psychological care, *n* = 24 GPs or ENT/AVMs referred ~30% to an audiologist, 12% to a hearing therapist	Health professional seen GPs, audiologists, ENT or AVM, hearing therapist and psychological care

(continued)

Table 2. (continued)

Study (including Author, Year, Sample Type, Sample Size, Setting, Description, Cohort Characteristics and Key Outcomes)	Measures for Help-Seeking or Patient Satisfaction	Help-Seeking Rate, Health Professional Seen and Satisfaction	Treatment Rate, Health Professional Seen and Treatment Effectiveness/Satisfaction
Cohort characteristics Adults with tinnitus *n* = 937		Satisfaction 33% reported a negative experience of tinnitus services told nothing can be done or learn to live with it. 38.5% of patients re-presented to their GP regarding their tinnitus of these 39.9% sought help after within the first two months after discharge from the hospital. Of those returning to primary care: 36.5% were referred back to hospital 24% were pre-scribed medication 39% were offered no further help One in eight of the overall survey population went through secondary care, returned to primary care then re-referred to secondary care	Treatment effectiveness/satisfaction n.a.
Key outcomes Negative counselling occurred at both primary and secondary clinical care levels. After going through both primary and secondary clinical care 1 in 8 of the surveyed group of patients sought help again through a GP thereby repeating the process. A range of interventions, tests and treatments were discussed or performed at primary and secondary level but the effectiveness was not measured			
The Royal National Institute for Deaf People [RNID], 2019	Survey questions	Help-seeking rate	Treatment rate Audiologist offered treatments, 71% offered hearing aids 30% sound therapy devices 3% recommended Cognitive Behavioural Therapy (CBT) ENT offered treatments 59% (of *n* = 111) offered hearing aids, 27% other treatments, 17% sound therapy products 3% about Cognitive Behavioural Therapy (CBT)
Self-selected sample Scotland		Health professional seen 64% (of *n* = 418) GP Audiologist, *n* = 259 ENT, *n* = 133 Counsellor, *n* = 27	Health professional seen GP Audiologist ENT Counsellor
Cohort characteristics Adults with tinnitus *n* = 459		Satisfaction GP 47% (of *n* = 314) reported no information given for tinnitus. 56% (of *n* = 325) were referred on to an audiology service, 30% were referred to an ENT and 21% no referral. 37% (of 315 respondents) were satisfied and 25% were dissatisfied with the information, treatments or support. Audiologist (*n* = 259) 33% were satisfied and 25% of respondents were dissatisfied with the information, treatments or support. ENT (*n* = 123) 23% were satisfied and 31% of respondents were dissatisfied with the information, treatments or support Counselling experiences (*n* = 37) 27% were very satisfied or satisfied and 29% were dissatisfied or very dissatisfied with the information, treatments or support. 37% of participants were satisfied with the information, treatment or support they received from a GP, audiology service, ENT clinic or counsellor. 25% were dissatisfied and approximately half did not feel empowered to manage their tinnitus after seeing a health professional	Treatment effectiveness/satisfaction See satisfaction column

(continued)

Table 2. (continued)

Study (including Author, Year, Sample Type, Sample Size, Setting, Description, Cohort Characteristics and Key Outcomes)	Measures for Help-Seeking or Patient Satisfaction	Help-Seeking Rate, Health Professional Seen and Satisfaction	Treatment Rate, Health Professional Seen and Treatment Effectiveness/Satisfaction
Key outcomes Most of those seeking for tinnitus were satisfied with the consultation from either a GP, audiologists, ENTs or counsellor however were almost a third of respondents reported being negatively counselled by GPs. Overall the majority did not feel that they could cope with their tinnitus even after seeing a healthcare provider			
Wray, 2021 Self-selected sample United Kingdom Cohort characteristics Adults with tinnitus, *n* = 2,145 Before and after of NICE guidelines being introduced to GPs and happened to take place during COVID-19	Survey questions	Help-seeking rate 22% reported that they were unable to get an appointment at least once because of COVID-19 restrictions Health professional seen Saw a GP before NICE guidelines, *n* = 1,303 Saw a GP after Nice guidelines, *n* = 339 Satisfaction Before guidelines, 38% reported that the GP told them that nothing could be done this reduced to 19% after guidelines. There was a small rise in GPs exploring tinnitus and quality of life of patients (23%–29%) and mental health (12%–17%). The proportion of GPs offering reassurances about tinnitus and managing it reduced slightly 32% to 27%. Those who experienced a positive appointment with their GP reported it helped them to access support (45%), increase understanding of the tinnitus (31%) and reduce anxiety (20%). Patients reported before and after the publication of NICE Guidelines that the GP "understood" (29%) and "wanted to help" (40%)	Treatment rate n.a. Health professional seen GP Treatment effectiveness/satisfaction n.a.
Key outcomes The study found that is too soon to measure the impact of the NICE tinnitus guidelines. A positive experience in the initial appointment regarding tinnitus had benefits for the patients regarding decreased anxiety and increased access to support. Since the publication of the guidelines a lack of available specialists and COVID-19 has further impacted on accessing specialist care for tinnitus, reducing referrals to 50% to either an audiologist, ENT (ear, nose and throat) specialist, audio-vestibular physician or psychologist. The key is ensuring that GPs, who commonly are the first point of contact for people with tinnitus, are provided the capacity, tools and training to do so effectively			
Beukes et al., 2021 Self-selected sample North America (Canada and US) Cohort characteristics Adults with tinnitus *n* = 1,522 Impact of COVID-19 on help-seeking for tinnitus	Survey questions	Help-seeking rate Some participants reported seeing primary care physicians (GP) or professional/ specialists for tinnitus. Help-seeking was significantly related to tinnitus severity and how bothersome the tinnitus was. Tinnitus distress was significantly less for those who sought help via usual clinics or had ongoing or remote support Health professional seen Saw a GP before COVID-19, *n* = 724 Saw a GP during COVID-19, *n* = 25 Saw a specialist before COVID-19, *n* = 1193 Saw a specialist during COVID-19. *n* = 104 Satisfaction The majority of those who sought additional help (*n* = 74) rated the support as generally helpful 66% or very helpful 24%, with 9% indicating that the support was not helpful	Treatment rate The types of treatment or support used was internet interventions, group therapy, ATA support, nothing, self-help support, primary care physician or a professional specialist. Less of these were utilised during the pandemic compared to before the pandemic Health professional seen Primary care physicians (GP) or professional/ specialists for tinnitus Treatment effectiveness/satisfaction n.a.
Key outcomes Those with more severe tinnitus were more likely to seek additional help for it and were satisfied with what was provided. Less people sought help for tinnitus during the COVID-19 pandemic. Themes raised included improving training for health professionals for tinnitus management, developing evidence-based treatments for tinnitus and for health professionals to have a positive approach when communicating about tinnitus to patients as it is likely to assist in coping with tinnitus			

(continued)

Table 2. (continued)

Study (including Author, Year, Sample Type, Sample Size, Setting, Description, Cohort Characteristics and Key Outcomes)	Measures for Help-Seeking or Patient Satisfaction	Help-Seeking Rate, Health Professional Seen and Satisfaction	Treatment Rate, Health Professional Seen and Treatment Effectiveness/Satisfaction
West, 1999	Survey questions	Help-seeking rate All participants	Treatment rate For ENT patients: 26% hearing aids 21.7% tablets 8.7% relaxation training 8.7% surgical operation 4.3% tinnitus masker 26% hearing therapy 4.3% clinical psychology For audiology patients: 30% hearing aids 15% tablets 5% relaxation training 2.5% surgical operation 25% tinnitus masker 37.5% hearing therapy
Clinical/cohort sample United Kingdom		Health professional seen Audiologist (n = 40) ENT (n = 23)	Health professional seen Audiologists ENTs
Cohort characteristics Adults with tinnitus n = 63		Satisfaction Audiologists (n = 40) Almost all of those seeing an audiological physician reported it was helpful (97.5%), were able to discuss their problem (95%) and obtained useful information (95%). ENTs (n = 23) Most of those seeing an ENT surgeon reported it was helpful (74%), were able to discuss their problem (83%) and obtained useful information (70%). A few participants noted some negative experiences in the consultation such as not being listen to or understand, not understanding what was being said, being spoken down to or lack of information about tinnitus. Positive comments were related to more time in audiology clinic resulted in more psychological care. Significantly higher ratings on most items of satisfaction survey for audiological medicine clinic than for the ENT clinic	Treatment effectiveness/satisfaction n.a
Key outcomes Overall high levels of satisfaction for both types of clinics, but higher for audiology clinic. Most of the interventions were rated as most helpful. Despite these high ratings, some negative aspects of consultations were still reported			
Sanchez & Stephens, 2000	Survey questions	Help-seeking rate All participants Group 1 (n = 86) Group 2 (n = 66)	Treatment rate All participants
Clinical/cohort sample Wales		Health professional seen Clinicians at a specialist tinnitus clinic which included an audiological physician, audiology technicians, a hearing therapist, a physiotherapist and a psychiatrist (latter two on referral only)	Health professional seen Clinicians at a specialist tinnitus clinic

(continued)

Table 2. (continued)

Study (including Author, Year, Sample Type, Sample Size, Setting, Description, Cohort Characteristics and Key Outcomes)	Measures for Help-Seeking or Patient Satisfaction	Help-Seeking Rate, Health Professional Seen and Satisfaction	Treatment Rate, Health Professional Seen and Treatment Effectiveness/Satisfaction
Cohort characteristics Adults with tinnitus *n* = 152 Group 1 randomly sampled from the patient database of those who first attended the clinic more than 18 months prior to the study. Group 2 seen more recently or during the course of the study, was sampled in entirety. This was done in an attempt to maximise the size of group 2 for the purposes of group comparisons		Satisfaction Perceived benefits Group 1 (*n* = 86) 71 some and 15 none Group 2 (*n* = 66) 64 some and 2 none Perceived shortcomings Group 1 (*n* = 86) 54 some and 32 none Group 2 (*n* = 66) 31 some and 35 none Respondents reported an average of 2.8 benefits compared to only 0.8 perceived shortcomings per respondent. Satisfaction outcomes were a combination of services and treatments see treatment effectiveness/satisfaction column. Statistically significant differences were found in volunteered benefits, fitting of tinnitus masker, reduced stress and worry, coming to terms with tinnitus and moving on in relation to group status. $p<0.05$. For sex hearing aid provision for men and less stress and worry and having a more positive attitude or feeling less depression for women. A statistically significant difference was found for the shortcoming "tinnitus persists" volunteered by 16.3% of group 1 compared with 1.5% of group 2	Treatment effectiveness/satisfaction Specific benefits listed are those greater than 10% reported by the respondents: 34.9% fitting of a hearing aid 26.3% positive characteristics of the clinic staff 18.4% fitting of a tinnitus masker 17.8% opportunity to discuss tinnitus with informed staff 14.5% improved health 13.8% reduced tinnitus 13.2% receiving a satisfactory explanation about the tinnitus 11.8% greater sense of well-being 10.5% reduced stress and worry 10.5% assisted by physiotherapy and relaxation Shortcomings listed are listed are those greater than 10% reported by the respondents: 17.6% interventions and treatments were ineffective 14.5% tinnitus was still a problem after appointment 10% insufficient feedback on the day of attendance 10% waiting time in the clinic
Key outcomes Most help seekers saw the clinic as beneficial, and offered more positive comments than shortcomings. Some expressed experiences of unnecessary distress and frustration due to negative views, lack of interest and information about tinnitus from medical practitioners when first seeking help for tinnitus			
Zarenoe & Ledin, 2014 Clinical/cohort sample Sweden Cohort characteristics Adults with tinnitus *n* = 426 Tinnitus loudness pure tone average (PTA) lower than 70 dB HL Sensorineural hearing loss(SNHL)	Survey questions	Help-seeking Sample, *n* = 376 Health professional seen ENT (*n* = 376) Did not answer (*n* = 50) Satisfaction Participants who reported their experiences of the tinnitus services they received in the free text box was 159/376. And 25/159 respondents commented that they had received an audiometric examination but no treatment	Treatment rate Sample, *n* = 376 reported on treatments 46.5% treatment "not good" or they had received no treatment Health professional seen ENT Treatment effectiveness/satisfaction 39.1% "good" or "very good" 14.4% "OK" 46.5% "not good" or they had received no treatment
Key outcomes Almost half of the participants reported treatment was unsatisfactory or they didn't receive any treatment for their tinnitus			
Goldstein et al., 2015 Clinical/cohort sample United States	Survey questions	Help-seeking rate All participants visited a tinnitus clinic to see specialists; a substantial portion saw more than one specialist at the clinic Health professional seen Otolaryngology (ENT) clinic/tinnitus clinic included physicians, audiologists, nurse practitioners, physician assistants and residents	Treatment rate n.a. Health professional seen Otolaryngology clinic (ENT)/tinnitus clinic included physicians, audiologists, nurse practitioners, physician assistants and residents

(continued)

Table 2. (continued)

Study (including Author, Year, Sample Type, Sample Size, Setting, Description, Cohort Characteristics and Key Outcomes)	Measures for Help-Seeking or Patient Satisfaction	Help-Seeking Rate, Health Professional Seen and Satisfaction	Treatment Rate, Health Professional Seen and Treatment Effectiveness/Satisfaction
Cohort characteristics Adults with tinnitus *n* = 230		Satisfaction No significant differences were found among responders, between patient satisfaction and sex, marital status, ethnicity, history of behavioural health treatment, reported sleep disturbances due to tinnitus, any particular medication recommendation (e.g. alprazolam, corticoids, ginkgo biloba),or dietary discussion and recommendations. No significant correlations were found between patient satisfaction and age, number of clinic visits or associated charges	Treatment effectiveness/satisfaction Neither the specific recommendations made by healthcare providers nor the overall number of recommendations appeared to affect patient approval
Key outcomes The study found that there were no associated factors than impacted on patient approval of services provided by the healthcare providers in the clinic			
Kim, 2018 Clinical/cohort sample New Zealand Cohort characteristics Adults with tinnitus *n* = 125	Survey questions	Help-seeking rate n.a. Health professional seen Tinnitus informed staff/audiologists Satisfaction Sample, *n* = 121 53.7% clinic was helpful 46.3% clinic was unhelpful Shortcomings of clinic (*n* = 121) 18% treatments did not help 15.6% time spent waiting or travelling was a problem 14.8% didn't get enough information 3.3% nervous at face to face appointment 19.7% other 44.3% no shortcomings Benefits (*n* = 122) 5.7% improved general health 14.6% hearing better 5.7% helping with emotional problems 19.5% reduced tinnitus 61% opportunity discuss tinnitus and receive satisfactory explanations about tinnitus from informed staff 24.4% fitting of treatment devices e.g. hearing aids/tinnitus maskers 15.6% other 26% no benefits	Treatment rate n.a. Health professional seen Tinnitus informed staff/audiologists Treatment effectiveness/satisfaction See satisfaction column
Key outcomes Participant's perceived satisfaction of the tinnitus service provided a better understanding of the gaps in the provision of care by the specialised tinnitus clinic and the study may help indicate what may be important to influence patient engagement with online tinnitus therapies			
Naughton, 2004 Interviews/qualitative sample Ireland	Survey questions	Help-seeking rate n.a. Health professional seen 89% GP 81% ENT 77% audiologist 32% hearing aid clinic or salesperson 12% psychological support	Treatment rate n.a. Health professional seen n.a.

(continued)

Table 2. (continued)

Study (including Author, Year, Sample Type, Sample Size, Setting, Description, Cohort Characteristics and Key Outcomes)	Measures for Help-Seeking or Patient Satisfaction	Help-Seeking Rate, Health Professional Seen and Satisfaction	Treatment Rate, Health Professional Seen and Treatment Effectiveness/Satisfaction
Cohort characteristics Adults with tinnitus *n* = 73		Satisfaction GPs 33.3% satisfied and 33.3% dissatisfied. Some GPs were helpful, some dismissive and some supportive although they did not know what treatment or advice to offer. ENTs 20% satisfied and >40% were dissatisfied. The majority of participants reported a dismissive approach towards tinnitus and no explanation. Audiologists 25% satisfied and 15% dissatisfied. Audiologists focused mainly on the audiological assessments and diagnosis of hearing, but offered little or no advice. Psychological support 44.4% satisfied and 11.1% dissatisfied	Treatment effectiveness/satisfaction 23 participants used a hearing aid or a 'masker,' 21.7% were satisfied and 30.4% dissatisfied with these. 51% tried alternative/complementary treatments, some felt more relaxed after some treatments but had little no benefit for tinnitus. A number of participants reported waiting an extending period of time following the referral from their GP, to an audiologist, ENT consultant or hearing therapist. One person waited eight months before been seen by a hearing therapist
Key outcomes Audiological and psychological care provided more positive outcomes for patients. Issues with lack of advice, long wait times and ineffective treatment were reported			
Andersson & Edvinsson, 2008	Survey questions	Help-seeking rate n.a.	Treatment rate n.a.
Interviews/qualitative sample Sweden	Modified grounded theory	Health professional seen Audiology and other healthcare settings. All saw a clinical psychologist and some saw complementary therapists	Health professional seen n.a.
Cohort characteristics Adults with tinnitus *n* = 7		Satisfaction Mainly positive experiences in audiology departments and health providers however long wait time to specialist care	Treatment effectiveness/satisfaction Psychological care (some had previous complementary treatment with no results)
Key outcomes For those seeking help for tinnitus there were positive experiences with audiology departments, and mainly positive experiences with other healthcare providers. However, there were concerns over wait times to specialist tinnitus care			
Redmond, 2010	Survey questions	Help-seeking rate n.a.	Treatment rate n.a.
Interviews/qualitative sample Northern Ireland		Health professional seen GPs ENTS Audiologists Hearing therapist Psychiatric care	Health professional seen n.a
Cohort characteristics Adults with tinnitus *n* = 20		Satisfaction > 50% reported that GPs were unhelpful. GPs gave no reassurance, information or advice regarding tinnitus management or made no referral. Participants were advised by GPs that 'there is no cure,' 'nothing can be done' and to 'learn to live with it.' > 50% reported dissatisfaction with audiologists. Some audiologists focused on hearing rather than tinnitus, had limited knowledge of tinnitus, did not provide information regarding tinnitus management nor made no referral. A minority of participants reported dissatisfaction with their ENT specialist's approach and limited knowledge of tinnitus. 4 participants were referred to a hearing therapist. All of these participants waited some time for a consultation (one participant reported waiting 8 months). All except one reported that the support from the hearing therapist was beneficial. One stated receiving psychiatric care, which was found to be beneficial	Treatment effectiveness/satisfaction n.a.

(continued)

Table 2. (continued)

Study (including Author, Year, Sample Type, Sample Size, Setting, Description, Cohort Characteristics and Key Outcomes)	Measures for Help-Seeking or Patient Satisfaction	Help-Seeking Rate, Health Professional Seen and Satisfaction	Treatment Rate, Health Professional Seen and Treatment Effectiveness/Satisfaction
Key outcomes Mixed opinions as there were reported issues with dismissive approach, lack of information regarding tinnitus from health professionals and long wait times for some specialist services. For the majority of those seeing help for tinnitus there was negative counselling from some the health professionals seen, a lack of information and long waits times to specialist services			
Adams et al., 2012	Survey questions	Help-seeking rate n.a.	Treatment rate Treated reported by a few participants
Interviews/qualitative sample Adelaide, SA, Australia	Grounded theory	Health professional seen A minority of participants reported visiting either a GP or ENT specialist. All attended a tinnitus information seminar	Health professional seen n.a.
Cohort characteristics Adults with tinnitus *n* = 13		Satisfaction Combination of relief from being told nothing was wrong and disappointed being told no cure for tinnitus	Treatment effectiveness/satisfaction Hearing aids or sound treatment. Other services/information utilised were books, internet and laser therapy
Key outcomes There was mixed opinion about the health professional encounter, although they were reassured that nothing was wrong with them, they were disappointed at being told there was no cure for tinnitus			
Pryce et al., 2018	Survey questions	Help-seeking rate n.a	Treatment rate Some participants reported trying treatments. The preferences for tinnitus treatment were information (choice and interpretation), psychological adjustment (either therapeutic discussion or individualised care) and use of sound (offering control.
Interviews/qualitative sample England	Grounded theory	Health professional seen 100% GP 36% audiologist 46% otolaryngologist (ENT) 24% audio vestibular physician 54% hearing therapists	Health professional seen n.a.
Cohort characteristics Adults with tinnitus *n* = 41		Satisfaction Information from healthcare providers informed the patient experience and preference for treatment were individualised care, tailored information and treatment assisting with psychological adjustment and auditory distraction	Treatment effectiveness/satisfaction n.a.
Key outcomes Those seeking help for tinnitus from a range of locations and tinnitus services wanted either a cure for tinnitus or reduction of the tinnitus distress. Patient's preferences were tailored information and care including psychological and auditory management of tinnitus. Participants expressed a preference for a cure for tinnitus to remove it altogether or improved coping and reduced tinnitus distress			
Marks et al., 2019	Survey questions	Help-seeking rate n.a.	Treatment rate n.a.
Interviews/qualitative sample United Kingdom	Interpretative phenomenological analysis	Health professional seen Doctors (GP or specialist) Nurses Clinical psychologist Other health professionals Percentages of those seen not reported	Health professional seen n.a.
Cohort characteristics Adults with tinnitus *n* = 9		Satisfaction Combination of helpful and unhelpful health professionals. Repeated help-seeking if the consultation was not helpful and relief when understood and helped by clinician	Treatment effectiveness/satisfaction Disappointed about no cure being available and some tried treatments but they failed. Initially biomedical treatment then psychological treatment considered after multiple help-seeking attempts
Key outcomes Main theme identified were 'living with tinnitus' and 'the health care journey.' Unhelpful interactions, seeking reassurance, and lack of cure, failed treatments versus helpful health care. The tinnitus experience was impacted by others i.e. healthcare professionals and the healthcare system. These interactions could impact positivity or negatively or not at all			

Satisfaction–General (FACIT-TS-G) survey (Webster et al., 2003) for treatment.

Treatments and Services

The most commonly reported tinnitus treatments provided by healthcare providers were educational/informational (explanation of tinnitus), audiological (sound enrichment using hearing aids, tinnitus masking device or sound devices) and psychological/counselling (psychological support or CBT) (Adams et al., 2012; Andersson & Edvinsson, 2008; Beukes et al., 2021; Bhatt et al., 2016; George & Kemp, 1991; Goldstein et al., 2015; Husain et al., 2018; Kim, 2018; Marks et al., 2019; McFerran et al., 2018; Naughton, 2004; The Royal National Institute for Deaf People [RNID], 2019; Sindhusake et al., 2003; West, 1999). Less often reported treatments were medication, surgical and medical procedures, relaxation/biofeedback/mindfulness, supplements or dietary recommendations and alternative therapies like acupuncture (Adams et al., 2012; Andersson & Edvinsson, 2008; Beukes et al., 2021; Bhatt et al., 2016; George & Kemp, 1991; Goldstein et al., 2015; Husain et al., 2018; Marks et al., 2019; McFerran et al., 2018; Naughton, 2004; The Royal National Institute for Deaf People [RNID], 2019; Sindhusake et al., 2003; West, 1999). Services included assessments such as audiometric assessment and or tympanometry, hearing tests and wax removal (McFerran et al., 2018).

In relation to help-seeking and receiving treatment, the studies reported that the level of help-seeking was lower in population samples compared with self-selected populations with the latter also reporting repeated help-seeking. The population sample studies reported that under half of the respondents with tinnitus sought help (30.3% (Sindhusake et al., 2003), 49.5% (Bhatt et al., 2016) and 43.5% (Carmody, 2016)). Four self-selected samples studies reported that the majority of respondents sought help from a health professional, (starting from 60% to 96%), (Carmody, 2016; George & Kemp, 1991; Husain et al., 2018; The Royal National Institute for Deaf People [RNID], 2019). One self-selected study reported that respondents saw a mean of 2.7 different types of health professionals (George & Kemp, 1991). Another study with self-selected participants reported repeated visits at primary and secondary care levels in order to gain referrals or treatments not given at initial stages of seeking help (McFerran et al., 2018). For the majority in population samples that sought help, most did not receive treatment, (over 84.8%), (Bhatt et al., 2016; Carmody, 2016; Sindhusake et al., 2003), even though hearing loss was higher in those with tinnitus and bothersome tinnitus was reported (16% reported tinnitus as extremely annoying (Sindhusake et al., 2003) and 7.2% reported it a big problem (Bhatt et al., 2016)). In the self-selected studies three studies reported that many respondents sought or tried more than one treatment, (from 40% to 70%), (Carmody, 2016; George & Kemp, 1991; Husain et al., 2018).

Accessing Specialist Care. In relation to accessing referrals and appointments, one self-selected sample study reported that the COVID-19 pandemic impacted on access to tinnitus care further reducing the already limited access, (Wray, 2021). A self-selected study reported that fewer people sought help for tinnitus from health professionals during the COVID-19 pandemic than before the pandemic (Beukes et al., 2021). Another self-selected sample study found that tinnitus impacted quality of life for some patients whilst they waited for appointments to specilaised tinnitus care (Wray et al., 2017).

Different Sample Categories and Patient Satisfaction with Services and Treatment

In relation to patient satisfaction and treatment effectiveness, one population study reported that of the 6% that had treatments, the majority of which (66.7%) reported those treatments as ineffective (Sindhusake et al., 2003) whilst 66.7% of those in a self-selected study reported they were dissatisfied with initial treatment (Carmody, 2016). The studies with self-selected participants reported barriers to care, negative counselling, a lack of information, no referrals, intervention or no treatment provided, ineffective treatments or long wait times and mixed reports of dissatisfaction and satisfaction with health professionals (Carmody, 2016; George & Kemp, 1991; Husain et al., 2018; McFerran et al., 2018; The Royal National Institute for Deaf People [RNID], 2019; Wray et al., 2017). Positive satisfaction ratings of services were reported when the health professionals were deemed helpful or patients received a referral or had an effective treatment (Beukes et al., 2021; George & Kemp, 1991; McFerran et al., 2018; The Royal National Institute for Deaf People [RNID], 2019; Wray, 2021). One study identified that patients wanted health professionals to have a positive approach when communicating about tinnitus to patients as it was likely to assist in coping with tinnitus (Beukes et al., 2021)

For patient satisfaction in the clinical/cohort samples the majority of respondents' provided positive ratings of tinnitus services. One study found that patients were slightly more positive when rating the services from an audiology clinic than from an ENT clinic (97.5% and 74% respectively) (West, 1999). Most of the clinical/cohort sample studies presented mainly positive satisfaction of services from healthcare providers, (Goldstein et al., 2015; Kim, 2018; Sanchez & Stephens, 2000; West, 1999) however, some negative experiences were reported which included not being listened to or understood by the healthcare provider, not understanding what was being said, being spoken down to or a lack of information about tinnitus in consultation (West, 1999) or treatments not helping reduce tinnitus (Kim, 2018). Respondents also reported experiences of unnecessary distress and frustration due to negative views, lack of interest and information about tinnitus from healthcare providers when seeking initial help for tinnitus (Sanchez & Stephens, 2000). In one study, around half of respondents (46.5%) reported that treatment was unsatisfactory or they did

not receive any treatment (Zarenoe & Ledin, 2014). Furthermore, another study found that the cost of care, repeated visits, age, sex, marital status, ethnicity, history of behavioural health treatment, sleep disturbances from tinnitus, any medication recommendation or dietary recommendations did not impact on the positive satisfaction with clinical services in a specialist tinnitus clinic (Goldstein et al., 2015).

For patient satisfaction in the interview/qualitative sample studies, respondents from three studies reported both positive and negative experiences along the tinnitus clinical pathway that impacted on their health care journey (Adams et al., 2012; Andersson & Edvinsson, 2008; Marks et al., 2019). Respondents in one of these studies perceived that there was no cure for tinnitus or nothing could be done for them; however, in the same study respondents also reported that they were reassured at being told nothing was wrong with them (Adams et al., 2012). Overall respondents reported concerns over dismissive health professionals, a lack of information and support, no or ineffective treatments and long wait times to specialists (Adams et al., 2012; Andersson & Edvinsson, 2008; Marks et al., 2019; Naughton, 2004; Pryce et al., 2018; Redmond, 2010). One study in particular reported that more respondents were dissatisfied than satisfied with health professionals; >50% reported GPs were unhelpful, >50% were unsatisfied with audiologists with a minority dissatisfied with ENTs (Redmond, 2010). Another study reported more respondents were dissatisfied with ENTs (around half) than GPs (33.3%) and audiologists (15%) (Naughton, 2004). The same study reported more respondents were dissatisfied with treatments than satisfied, of the 23 who reported using hearing aids or a 'masker for tinnitus,' 21.7% were satisfied and 30.4% dissatisfied (Naughton, 2004). Both studies reported psychological care to be of benefit to the few respondents that accessed it (Naughton, 2004; Redmond, 2010).

Factors Related to Help-seeking and Patient Satisfaction

Two studies measured the possible factors associated with help-seeking for tinnitus. One study found that those more depressed by their tinnitus saw significantly more health professionals as did those with more problematic tinnitus (George & Kemp, 1991). The other study found that help-seeking was also shown to be significantly related to tinnitus severity and how bothersome the tinnitus was (Beukes et al., 2021). Four studies measured the factors possibly associated with patient satisfaction. In one study the type of health professional seen either an ENT or audiologist was shown to influence the patient satisfaction with services (West, 1999). The other study measured possible associated factors such as age, number of clinic visits, associated costs, sex, marital status, ethnicity, history of behavioural health treatment, reported sleep disturbances due to tinnitus, medication recommendations or dietary recommendations and none of these factors were found to impact on patient satisfaction (Goldstein et al., 2015). In the third study no significant differences were found between patient satisfaction (diagnosis and/or treatment) for type of samples used, sex, hearing loss, medication, health provider seen, anxiety, depression, tinnitus distress or health status, nor was diagnosis satisfaction linked to treatment satisfaction (Carmody, 2016). The final study of benefits and shortcomings of a specialised tinnitus clinic assessed factors such as group status (group 1 being previous patients who first attended the clinic more than 18 months prior or group 2 more recent patients or during the course of the study) and sex (Sanchez & Stephens, 2000). The study found significant differences for group status for benefits volunteered for fitting of the tinnitus masker, reduced stress and worry, coming to terms with tinnitus and moving on (Sanchez & Stephens, 2000). A significant difference was also found for shortcomings for "tinnitus persists" volunteered by 16.3% of group 1 compared with 1.5% of group 2 (Sanchez & Stephens, 2000). The study also found significant differences for sex, for males it was hearing aid provision and for females less stress and worry and having a more positive attitude or feeling less depression (Sanchez & Stephens, 2000).

A study omitted from this scoping review showed that the type of treatments undertaken in a specialist tinnitus clinical setting may impact on patient satisfaction (Aazh et al., 2016). The study did not meet the inclusion criteria as it included data from children that could not be separated from the adult data, however, it does provide insight into the satisfaction ratings of treatments. The clinic received positive ratings from the patients overall (effective 36.4% or very effective 55.7%) (Aazh et al., 2016). Satisfaction with education, counselling and CBT was rated significantly higher than for devices such as hearing aids and noise generators (Aazh et al., 2016).

Discussion

The objective of this scoping review was to understand the extent and type of evidence in relation to seeking help for tinnitus and satisfaction with healthcare providers including diagnosis, clinical services, and treatments. All the studies included reported on one or more aspects of help-seeking for tinnitus and patient satisfaction with either diagnosis, clinical services or treatment effectiveness along the tinnitus clinical pathway provided by healthcare providers.

The studies in this scoping review were categorised according to the nature of study sample, representing the general population (population samples), people more negatively impacted by tinnitus (self-selected samples), those accessing help in specialist tinnitus clinics (clinic/cohort samples), and those assessing the experiences and themes that arise on the tinnitus journey (interview/qualitative studies). Each of the categories of samples used provided a different perspective of the help-seeker experience along the tinnitus clinical pathway. There were more respondents in self-selected samples who reported seeking help for tinnitus than those in the population samples, reflecting the way in which participants are recruited

into studies. Population samples are more likely to include those for whom tinnitus burden or distress is low.

Help-seeking Experiences

Some of the common outcomes identified by this scoping review were that help-seekers reported being negatively impacted by their tinnitus, (Beukes et al., 2021; George & Kemp, 1991; Wray et al., 2017) that obtaining referrals for problematic tinnitus could be difficult, (McFerran et al., 2018; The Royal National Institute for Deaf People [RNID], 2019) that help-seeking was repeated until a referral or treatment was received (George & Kemp, 1991; McFerran et al., 2018) and that there were long waits to access specialist tinnitus care (Andersson & Edvinsson, 2008; Naughton, 2004; Redmond, 2010; Wray et al., 2017). The initial interactions with healthcare providers when first seeking help for tinnitus were reported to impact either positively or negatively on the perception of tinnitus and the clinical journey experiences (Marks et al., 2019; Pryce et al., 2018). Help-seekers were seeing GPs, audiologists and ENTs, as recommended by many of the guidelines for the management of tinnitus (Fuller et al., 2017; Langguth et al., 2007). However, help-seekers appeared not to be receiving the help or intervention that they required or had to repeat help-seeking to obtain it (Carmody, 2016; George & Kemp, 1991; McFerran et al., 2018). This repeated help-seeking occurred at primary care and secondary care levels, (McFerran et al., 2018) highlighting that some GPs and specialists could be a barrier to specialist tinnitus services (El-Shunnar et al., 2011; Gander et al., 2011).

Patient Satisfaction

Participants reported dissatisfaction with the lack of information/education, dismissive attitudes or negative counselling, not being offered help for tinnitus, having unsuccessful treatment (George & Kemp, 1991; Sindhusake et al., 2003) or no treatment at all (Carmody, 2016; George & Kemp, 1991; Newall et al., 2001; Sindhusake et al., 2003; Zarenoe & Ledin, 2014). Where patients had access to a specialist tinnitus clinic, the majority of participants reported more positive experiences and satisfaction with the provider of the specialised care, services and treatments, (Goldstein et al., 2015; Kim, 2018; Sanchez & Stephens, 2000; West, 1999) in contrast to more negative experiences reported more frequently from interactions with other providers e.g. GPs, ENTs and audiologists (Carmody, 2016; Husain et al., 2018; Naughton, 2004; Redmond, 2010; Wray et al., 2017).

Help-seeking and Patient Satisfaction for Other Chronic Health Conditions

Studies on help-seeking for chronic conditions such as back pain, insomnia and migraine have reported similar barriers upon seeking help and reasons for patient (dis)satisfaction to those found in this review. Help seekers for these other conditions reported no physical examination, (Verbeek et al., 2004) greater satisfaction from allied health professionals rather than GPs, (Butler & Johnson, 2008; Verbeek et al., 2004) lack of knowledge of effective treatments, (Benca, 2005; Bigal et al., 2008) uninformed in regards to referrals, (Cheung et al., 2014) reluctance to provide recommended care or treatment (Bigal et al., 2008; Dodick et al., 2016) and incorrect diagnosis (Dodick et al., 2016). These studies all highlight the difficult process faced by people with chronic conditions to obtain a diagnosis and an informed approach to management of the condition. Satisfaction is more likely to be achieved from specialised clinics providing tailored services.

Healthcare Provider Perspective

Studies surveying health professionals who provide services for tinnitus mainly GPs, ENTs and audiologists show that there is a need for appropriate adherence of healthcare providers to tinnitus guidelines, improved access to specialised tinnitus assessment, tinnitus management or treatments and access to tailored psychological tinnitus care (El-Shunnar et al., 2011; Gander et al., 2011; Hall et al., 2011; Hoare et al., 2012, 2015; Kochkin & Tyler, 2008; McFerran et al., 2019; Redmond, 2010; Sheppard et al., 2022). A survey of members of the British Tinnitus Association (BTA), which included individuals with tinnitus as well as health professionals working with tinnitus patients, identified a number of uncertainties in tinnitus assessment, diagnosis and treatment along the clinical pathway (Hall et al., 2013). The study recommended that an increase in clinical trials and research was needed to address both the needs of the patients and the concerns of health professionals in the National Health System (NHS) in England (Hall et al., 2013).

Additional research on tinnitus healthcare systems from clinician/expert opinion has found that when comparing different healthcare settings i.e. countries and regions across Europe these healthcare structures varied significantly (Cima et al., 2020). Other major significant differences where the use of definitions of tinnitus, beliefs regarding tinnitus patient characteristics, assessment procedures used by clinicians and accessibility of treatments for patients (Cima et al., 2020). There were also differences in regions on who to seek help from i.e. GP first or to a specialised tinnitus clinic (if known) or available, also whether going to a GP was necessary in the first instance and having a lack of knowledge of referral patterns or awareness of who to refer to if specialised tinnitus clinics existed there (Cima et al., 2020). These findings indicate the importance of knowing the referral pathway for tinnitus (Cima et al., 2020). Knowing the referral pathway is necessary for clinicians and the research suggests to incorporate this in the European tinnitus guidelines to address the clinician lack of knowledge (Cima et al., 2020) therefore further assisting those seeking help for tinnitus.

Clinical Guidelines for Tinnitus

This scoping review shows that most dissatisfaction with and barriers to receiving help for tinnitus occur at the initial stages of the clinical journey, and that satisfaction increases once patients access specialised care or a tinnitus clinic. This suggests that healthcare providers should be encouraged to provide information about and/or referral to specialised services in the initial appointment. Help-seeking experiences at the initial stages of seeking care informs and influences how those with tinnitus manage and whether they seek and or receive further help. The application of clinical guidelines and recommendations addressing diagnostics, assessment, referral, management and treatment of tinnitus along clinical pathways by practitioners is required to intervene at the initial and or vulnerable stages of seeking help for tinnitus (Fuller et al., 2017; Langguth et al., 2007).

A number of the reviewed studies used clinical practice guidelines to inform on their research (Bhatt et al., 2016; Husain et al., 2018; McFerran et al., 2018; Wray, 2021). A preliminary study by the British Tinnitus Association (BTA) reported on the satisfaction with GPs before and after the publication of latest NICE guidelines (2020) were introduced in the NHS for tinnitus patients, the report showed that after the guidelines were introduced there was a reduction in the reporting of GPs negatively counselling tinnitus patients. (Wray, 2021). Bhatt et al., 2016 examined the data before and after the implementation the American Academy of Otolaryngology–Head and Neck Surgery Foundation (AAO-HNSF) multidisciplinary clinical practice guidelines (Tunkel et al., 2014). They showed that the management options outlined by the AAO-HNSF guidelines were not followed consistently, with most interventions infrequently discussed: hearing aids (9.2%), wearable (2.6%) and non-wearable (2.3%) masking devices, and cognitive behavioural therapy (0.2%). On the other hand, medications were discussed in 45.4% of instances, as recommended by the AAO-HNSF guidelines even though few drugs have been shown to alleviate tinnitus (Ahmad & Seidman, 2004; Cederroth et al., 2018; Langguth et al., 2009). McFerran et al. acknowledges the development of a number of guidelines in recent years, which include the Department of Health (UK) guidelines best practice guide in 2009, the AAO-HNSF (US) clinical practice guidelines and more recently the National Institute for Health and Care Excellence (NICE) (UK) clinical knowledge summary (accessed in 2017) (McFerran et al., 2018) (this has been updated to the *Tinnitus: assessment and management guide* and published in 2020) (Wray, 2021). However, despite these guidelines, many help-seekers still report dissatisfaction with tinnitus services with negative counselling occurring at primary and secondary levels of care (McFerran et al., 2018). Husain et al. examined satisfaction with tinnitus services in the US and 70% of healthcare providers were audiologists (Husain et al., 2018). The American Academy of Audiology (AAA) provides audiology guidelines on the diagnosis and management of tinnitus patients (Husain et al., 2018). Patients reported they were advised that nothing could be done, they were not given information about tinnitus and majority of patients rated healthcare provider treatment or management of tinnitus as ineffective (Husain et al., 2018). For these reviewed studies it suggests that at primary and at specialised levels of care guidelines are not always followed. There could be many reasons for this, for example a lack of available services (Gander et al., 2011) or a lack of awareness of what is available for patients (Cima et al., 2020).

The TINNET initiative on establishing multidisciplinary European guidelines for tinnitus including diagnostics, assessment, treatment options, referral pathways, patient information and support based their criteria on a systematic review by Fuller et al., 2017 (Cima et al., 2019; Fuller et al., 2017). The five documents included were the national clinical practice guidelines from Denmark (Jørgensen et al., 2007), Germany (The Association of the Scientific Medical Societies, 2015), Sweden (Idrizbegovic et al., 2011), The Netherlands (Nederlandse Vereniging voor Keel – Neus – Oor heel kunde en Heelkunde van het Hoofd – Halsgebied, 2020) and the USA (Tunkel et al., 2014). All but one of the guidelines (Sweden) provided information and referred to the research literature associated with the particular recommendation (Cima et al., 2019; Fuller et al., 2017). Based on the recommendations of these guides on the clinical care of tinnitus they all agree that an audiological assessment be performed and that a validated survey be used to determine the degree of tinnitus distress (Fuller et al., 2017). All but one guide (Germany) recommended referring on to psychological or psychiatric care should the tinnitus distress be more severe and impacting on quality of life (Fuller et al., 2017). For treatment and management of tinnitus the recommendations of all guides provided information about tinnitus and treatment options for patients and using hearing aids only when patients also experienced hearing loss (Fuller et al., 2017). All of the guides except for the one from Denmark recommended CBT, three of which (Germany, The Netherlands and the USA) recommended specialised CBT for tinnitus and one (Sweden) recommended CBT for co-morbid anxiety or depression (Fuller et al., 2017). By following these recommendations, health professionals should be able to at minimum help the patient identify if hearing loss is present or possibly other ear based issues or refer on to get this assessed, ascertain the level of tinnitus distress using a validated survey, provide a referral to psychological care or CBT based tinnitus therapy and or management of tinnitus.

Recommendations and Future Directions

The use of appropriate guidelines at primary care level for GPs and healthcare providers is recommended to inform on referrals on to specialised care. These guidelines also provide evidence-based advice on the diagnosis of tinnitus, and

potential interventions such as hearing aids, and psychological therapies. Additionally, those with tinnitus should be encouraged to persist with help-seeking, particularly in the face of being negatively counselled, or not being referred for specialist help from audiologists or ENTs.

Patient satisfaction is a growing area of research, but currently there is no standard way of measuring help-seeking or patient satisfaction in tinnitus research and in health science (Batbaatar et al., 2017; Verbeek, 2004). However, there are validated surveys that can be used to measure different aspects of patient satisfaction or clinical settings. For example, for patient satisfaction of a therapy for a chronic illness, the Functional Assessment of Chronic Illness Therapy scales would be a suitable choice for chronic conditions like tinnitus (Webster et al., 2003) and for measuring clinic or hospital settings the Australian Hospital Patient Experience Question Set (AHPEQS) would be suitable (Jones et al., 2021). In this scoping review the majority of studies reported their findings using unvalidated questions, and they did not assess the possible associated factors with help-seeking or with patient satisfaction. Further investigation on what factors motivate help-seeking, the type of health professional seen for the tinnitus whether it be a GP or specialist (ENT or audiologist) and type of treatments undertaken, either education, psychological or audiological that may impact on patient satisfaction, is recommended.

Limitations

As this was not a systematic review of the literature on seeking help for tinnitus and the satisfaction with the clinical experience including diagnosis, clinical services and treatment provided by healthcare providers we did not make any conclusions about the quality of the studies applying measures on either help-seeking or patient satisfaction. The inclusion criteria of the scoping review were limited to published and unpublished original studies in English. Although this did include studies conducted in non-English speaking countries published in English, care should be taken in generalising the findings to other countries and settings. This scoping review included only adults with tinnitus and excluded studies with data on childhood tinnitus. Finally, the number of studies on this research topic was limited.

Conclusions

The research suggests that although those seeking help for tinnitus found their way to a healthcare provider, it was unlikely for most help-seekers to be satisfied with the initial experience. It was also unlikely that help-seekers received a referral to a specialist at the initial consultation with a GP. Of the small group that received treatment, most reported that it was either unsatisfactory or ineffective. However, once help-seekers were in a specialised tinnitus clinical setting they were more positive with their satisfaction ratings of healthcare providers, services, procedures, and treatments. Positive and negative experiences impacted on the healthcare journey of those seeking help for their tinnitus and it shaped their perceptions of tinnitus and future interactions with healthcare providers. More positive approaches to communicating the tinnitus diagnosis and referrals to specialised tinnitus care would help patients in their journey of adjusting to tinnitus.

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Supplemental Material

Supplemental material for this article is available online.

References

Aazh, H., Moore, B. C., Lammaing, K., & Cropley, M. (2016). Tinnitus and hyperacusis therapy in a UK National Health Service audiology department: Patients' evaluations of the effectiveness of treatments. *International Journal of Audiology*, *55*(9), 514–522. https://doi.org/10.1080/14992027.2016.1178400

Adams, J., Verrier, E., Walsh, M., & Lind, C. (2012). Adults' perceptions of their tinnitus and a tinnitus information service. *The Australian and New Zealand Journal of Audiology*, *32*(2), 83. https://researchnow.flinders.edu.au/en/publications/adults-perceptions-of-their-tinnitus-and-a-tinnitus-information-s

Adams, P. F., Hendershot, G. E., Marano, M. A., & Centers for Disease, C., Prevention/National Center for Health. (1999). Current estimates from the national health interview survey, 1996. *Vital Health Statistics*, *10*(200), 1–203. http://www.ncbi.nlm.nih.gov/pubmed/15782448

Adrian, D., & El Refaie, A. (2000). The epidemiology of tinnitus. In R. Tyler (Ed), *The Handbook of tinnitus* (pp. 1–23). https://research-information.bris.ac.uk/en/publications/the-epidemiology-of-tinnitus

Ahmad, N., & Seidman, M. (2004). Tinnitus in the older adult: Epidemiology, pathophysiology and treatment options. *Drugs Aging*, *21*(5), 297–305. http://www.ncbi.nlm.nih.gov/pubmed/15040757

Andersson, G., & Edvinsson, E. (2008). Mixed feelings about living with tinnitus: A qualitative study. *Audiological Medicine*, *6*(1), 48–54. https://doi.org/10.1080/16513860801899355

Arksey, H., & O'Malley, L. (2005). Scoping studies: Towards a methodological framework. *International Journal of Social*

Research Methodology, *8*(1), 19–32. https://doi.org/10.1080/1364557032000119616

Attias, J., Shemesh, Z., Bleich, A., Solomon, Z., Bar-Or, G., Alster, J., & Sohmer, H. (1995). Psychological profile of help-seeking and non-help-seeking tinnitus patients. *Scandinavian audiology*, *24*(1), 13–18. https://doi.org/10.3109/01050399509042204

Baguley, D. M. (2002). Mechanisms of tinnitus. *British Medical Bulletin*, *63*(1), 195–212. https://doi.org/10.1093/bmb/63.1.195

Baguley, D., McFerran, D., & Hall, D. (2013). Tinnitus. *Toxicology Letters*, *382*(9904), 1600–1607. https://doi.org/10.1016/S0140-6736(13)60142-7

Batbaatar, E., Dorjdagva, J., Luvsannyam, A., Savino, M. M., & Amenta, P. (2017). Determinants of patient satisfaction: A systematic review. *Perspectives in Public Health*, *137*(2), 89–101. https://doi.org/10.1177/1757913916634136

Benca, R. M. (2005). Diagnosis and treatment of chronic insomnia: A review. *Psychiatric Services*, *56*(3), 332–343. https://doi.org/10.1176/appi.ps.56.3.332

Beukes, E. W., Onozuka, J., Brazell, T. P., & Manchaiah, V. (2021). Coping with tinnitus during the COVID-19 pandemic. *American Journal of Audiology*, *30*(2), 385–393. https://doi.org/10.1044/2021_AJA-20-00188

Bhatt, J. M., Lin, H. W., & Bhattacharyya, N. (2016). Prevalence, severity, exposures, and treatment patterns of tinnitus in the United States. *JAMA Otolaryngol Head Neck Surg*, *142*(10), 959–965. https://doi.org/10.1001/jamaoto.2016.1700

Bigal, M. E., Serrano, D., Reed, M., & Lipton, R. B. (2008). Chronic migraine in the population: Burden, diagnosis, and satisfaction with treatment. *Neurology*, *71*(8), 559–566. https://doi.org/10.1212/01.wnl.0000323925.29520.e7

Brown, S. C., Johnson, R. C., & Smith, D. L. (1990). *Older Americans and tinnitus: A demographic study and chartbook*. Center for Assessment and Demographic Studies, Gallaudet Research Institute, Gallaudet University.

Butler, R. J., & Johnson, W. G. (2008). Satisfaction with low back pain care. *The Spine Journal*, *8*(3), 510–521. https://doi.org/10.1016/j.spinee.2007.04.006

Carmody, N. (2016). Help-seeking in tinnitus: Low patient satisfaction calls for improvements. *The Hearing Journal*, *69*(642), 4144. https://doi.org/10.1097/01.hj.0000484552.05796.d8

Cederroth, C. R., Dyhrfjeld-Johnsen, J., & Langguth, B. (2018). An update: Emerging drugs for tinnitus. *Expert Opinion on Emerging Drugs*, *23*(4), 251–260. https://doi.org/10.1080/14728214.2018.1555240

Cheung, J. M., Bartlett, D. J., Armour, C. L., Glozier, N., & Saini, B. (2014). Insomnia patients' help-seeking experiences. *Behavioral Sleep Medicine*, *12*(2), 106–122. https://doi.org/10.1080/15402002.2013.764529

Cima, R., Mazurek, B., Haider, H., Kikidis, D., Lapira, A., Noreña, A., & Hoare, D. (2019). A multidisciplinary European guideline for tinnitus: Diagnostics, assessment, and treatment. *HNO*, *67*(Suppl 1), 10–42. https://doi.org/10.1007/s00106-019-0633-7

Cima, R. F., Kikidis, D., Mazurek, B., Haider, H., Cederroth, C. R., Norena, A., Lapira, A., Bibas, A., & Hoare, D. J. (2020). Tinnitus healthcare: A survey revealing extensive variation in opinion and practices across Europe. *BMC Ophthalmology*, *10*(1), e029346. https://doi.org/10.1136/bmjopen-2019-029346

Cornally, N., & McCarthy, G. (2011). Help-seeking behaviour: A concept analysis. *International Journal of Nursing Practice*, *17*(3), 280–288. https://doi.org/10.1111/j.1440-172X.2011.01936.x

Crummer, R. W., & Hassan, G. A. (2004). Diagnostic approach to tinnitus. *American Family Physician*, *69*(1), 120–126. http://www.ncbi.nlm.nih.gov/pubmed/14727828

Dauman, R., & Tyler, R. S. (1992). Some considerations on the classification of tinnitus. In J.-M. Aran, & R. Dauman (Eds), *Proceedings of the fourth international tinnitus seminar, bordeaux, France* (pp. 225–229). Kugler.

Davis, C. G., & Morgan, M. S. (2008). Finding meaning, perceiving growth, and acceptance of tinnitus. *Rehabilitation Psychology*, *53*(2), 128–138. https://doi.org/10.1037/0090-5550.53.2.128

De Ridder, D., Schlee, W., Vanneste, S., Londero, A., Weisz, N., Kleinjung, T., Shekhawat, G. S., Elgoyhen, A. B., Song, J. J., Andersson, G., Adhia, D., de Azevedo, A. A., Baguley, D. M., Biesinger, E., Binetti, A. C., Del Bo, L., Cederroth, C. R., Cima, R., Eggermont, J. J., & Figueiredo, R. (2021). Tinnitus and tinnitus disorder: Theoretical and operational definitions (an international multidisciplinary proposal). *Progress in Brain Research*, *260*, 1–25. https://doi.org/10.1016/bs.pbr.2020.12.002

Dodick, D. W., Loder, E. W., Manack Adams, A., Buse, D. C., Fanning, K. M., Reed, M. L., & Lipton, R. B. (2016). Assessing barriers to chronic migraine consultation, diagnosis, and treatment: Results from the chronic migraine epidemiology and outcomes (CaMEO) study. *Headache: The Journal of Head and Face Pain*, *56*(5), 821–834. https://doi.org/10.1111/head.12774

Nederlandse Vereniging voor Keel – Neus – Oor heel kunde en Heelkunde van het Hoofd – Halsgebied (2020). Richtlijn tinnitus [guideline tinnitus]. Utrecht. https://nvab-online.nl/sites/default/files/bestanden-webpaginas/RL_slechthorendheid-tinnitus_2020_def.pdf

El-Shunnar, S. K., Hoare, D. J., Smith, S., Gander, P. E., Kang, S., Fackrell, K., & Hall, D. A. (2011). Primary care for tinnitus: Practice and opinion among GPs in England. *Journal of Evaluation in Clinical Practice*, *17*(4), 684–692. https://doi.org/10.1111/j.1365-2753.2011.01696.x

Fuller, T. E., Haider, H. F., Kikidis, D., Lapira, A., Mazurek, B., Norena, A., Rabau, S., Lardinois, R., Cederroth, C. R., Edvall, N. K., Brueggemann, PG, Rosing, SN, Kapandais, A, Lungaard, D., Hoare, D. J., & Cima, R. F. (2017). Different teams, same conclusions? A systematic review of existing clinical guidelines for the assessment and treatment of tinnitus in adults. *Frontiers in psychology*, *8*, 206. https://doi.org/10.3389/fpsyg.2017.00206

Gander, P. E., Hoare, D. J., Collins, L., Smith, S., & Hall, D. A. (2011). Tinnitus referral pathways within the national health service in England: A survey of their perceived effectiveness among audiology staff. *BMC Health Services Research*, *11*, 162. https://doi.org/10.1186/1472-6963-11-162

George, R. N., & Kemp, S. (1991). A survey of New Zealanders with tinnitus. *Br J Audiol*, *25*(5), 331–336. https://doi.org/10.3109/03005369109076606

Goldstein, E., Ho, C.-X., Hanna, R., Elinger, C., Yaremchuk, K. L., Seidman, M. D., & Jesse, M. T. (2015). Cost of care for subjective tinnitus in relation to patient satisfaction. *Otolaryngology–Head and Neck Surgery*, *152*(3), 518–523. https://doi.org/10.1177/0194599814566179

Goldstein, M. S., Elliott, S. D., & Guccione, A. A. (2000). The development of an instrument to measure satisfaction with physical therapy. *Physical Therapy*, *80*(9), 853–863. https://doi.org/10.1093/ptj/80.9.853

Hall, D. A., Láinez, M. J., Newman, C. W., Sanchez, T. G., Egler, M., Tennigkeit, F., Koch, M., & Langguth, B. (2011). Treatment options for subjective tinnitus: Self reports from a sample of general practitioners and ENT physicians within Europe and the USA. *BMC Health Services Research*, *11*(1), 302. https://doi.org/10.1186/1472-6963-11-302

Hall, D. A., Mohamad, N., Firkins, L., Fenton, M., & Stockdale, D. (2013). Identifying and prioritizing unmet research questions for people with tinnitus: The james lind alliance tinnitus priority setting partnership. *Clinical Investigation*, *3*(1), 21–28. https://doi.org/10.4155/cli.12.129

Hallberg, L. R., & Erlandsson, S. I. (1993). Tinnitus characteristics in tinnitus complainers and noncomplainers. *ritish Journal of Audiology*, *27*(1), 19–27. https://doi.org/10.3109/03005369309077885

Han, B. I., Lee, H. W., Kim, T. Y., Lim, J. S., & Shin, K. S. (2009). Tinnitus: Characteristics, causes, mechanisms, and treatments. *Journal of Clinical Neurology*, *5*(1), 11–19. https://doi.org/10.3988/jcn.2009.5.1.11

Hoare, D. J., Broomhead, E., Stockdale, D., & Kennedy, V. (2015). Equity and person-centeredness in provision of tinnitus services in UK National Health Service audiology departments. *European Journal for Person Centered Healthcare*, *3*(3), 318–326. https://doi.org/10.5750/ejpch.v3i3.984.

Hoare, D. J., Gander, P. E., Collins, L., Smith, S., & Hall, D. A. (2012). Management of tinnitus in English NHS audiology departments: An evaluation of current practice. *Journal of Evaluation in Clinical Practice*, *18*(2), 326–334. https://doi.org/10.1111/j.1365-2753.2010.01566.x

Hoare, D. J., & Hall, D. A. (2011). Clinical guidelines and practice: A commentary on the complexity of tinnitus management. *Evaluation & the Health Professions*, *34*(4), 413–420. https://doi.org/10.1177/0163278710390355

Husain, F. T., Gander, P. E., Jansen, J. N., & Shen, S. (2018). Expectations for tinnitus treatment and outcomes: A survey study of audiologists and patients. *Journal of the American Academy of Audiology*, *29*(4), 313–336. https://doi.org/10.3766/jaaa.16154

Idrizbegovic, E., & Kjerulf, E. (2011). *Tinnitus care program [tinnitus Vårdprogram]*. Karolinska Institute.

Jarach, C. M., Lugo, A., Scala, M., van den Brandt, P. A., Cederroth, C. R., Odone, A., Garavello, W., Schlee, W., Langguth, B., & Gallus, S. (2022). Global prevalence and incidence of tinnitus: A systematic review and meta-analysis. *JAMA Neurol*, *79*(9), 888–900. \https://doi.org/10.1001/jamaneurol.2022.2189

Jones, C. H., Woods, J., Brusco, N. K., Sullivan, N., & Morris, M. E. (2021). Implementation of the Australian hospital patient experience question set (AHPEQS): A consumer-driven patient survey. *Australian Health Review*, *45*(5), 562–569. https://doi.org/10.1071/AH20265

Jørgensen, H. S., Amt, F., Nemholt, S. S., Kristensen, R., & Ellesøe, H. (2007). Guidance for Diagnosing Tinnitus and Hyperacusis [Vejledning for udredning af tinnitus og hyperakusis]. In *Vejledninger i udredning*. S.l. Danske Tale-Høre-Synsinstitutioner: eksp. Center for Hjælpemidler og Kommunikation. https://dths.dk/wp-content/uploads/2022/12/vejledninger-vol1.pdf

Kim, S. J. (2018). *The benefits and shortcomings of a specialised tinnitus clinic and patient engagement with online tinnitus therapies*. [Doctoral dissertation. ResearchSpace]. https://researchspace.auckland.ac.nz/handle/2292/37410

Kochkin, S., & Tyler, R. (2008). Tinnitus treatment and the effectiveness of hearing aids: Hearing care professional perceptions. *Hearing Review*, *15*(13), 14–18. https://www.researchgate.net/publication/242163034_Tinnitus_Treatment_and_the_Effectiveness_of_Hearing_Aids_Hearing_Care_Professional_Perceptions

Langguth, B., Goodey, R., Azevedo, A., Bjorne, A., Cacace, A, Crocetti, A., Del Bo, L., De Ridder, D., Diges, I., Elbert, T., Flor, H., Herraiz, C., Ganz Sanchez, T., Eichhammer, P., Figueiredo, R., Hajak, G., Kleinjung, T., Landgrebe, M., Londero, A., & Lainez, M. J. (2007). Consensus for tinnitus patient assessment and treatment outcome measurement: Tinnitus Research Initiative meeting, Regensburg. *Progress in Brain Research*, *166*, 525–536. https://doi.org/10.1016/S0079-6123(07)66050-6

Langguth, B., Kleinjung, T., & Landgrebe, M. (2011). Tinnitus: The complexity of standardization. *Evaluation & the Health Professions*, *34*(4), 429–433. https://doi.org/10.1177/0163278710394337

Langguth, B., Kreuzer, P. M., Kleinjung, T., & De Ridder, D. (2013). Tinnitus: Causes and clinical management. *Lancet Neurology*, *12*(9), 920–930. https://doi.org/10.1016/S1474-4422(13)70160-1

Langguth, B., Salvi, R., & Elgoyhen, A. B. (2009). Emerging pharmacotherapy of tinnitus. *Expert Opinion on Emerging Drugs*, *14*(4), 687–702. https://doi.org/10.1517/14728210903206975

Lee, H. M., Han, K., Kong, S. K., Nam, E. C., Park, S. N., Shim, H. J., Byun, J. Y., Park, H. J., Im, G. J., & Lee, I.-W. (2018). Epidemiology of clinically significant tinnitus: A 10-year trend from nationwide health claims data in South Korea. *Otology & Neurotology*, *39*(6), 680–687. https://doi.org/10.1097/mao.0000000000001832

Levac, D., Colquhoun, H., & O'Brien, K. K. (2010). Scoping studies: Advancing the methodology. *Implementation Science*, *5*(1), 1–9. https://doi.org/10.1186/1748-5908-5-69

Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gøtzsche, P. C., Ioannidis, J. P. A., Clarke, M., Devereaux, P. J., Kleijnen, J., & Moher, D. (2009). The PRISMA statement for reporting

systematic reviews and meta-analyses of studies that evaluate healthcare interventions: Explanation and elaboration. *Bmj: British Medical Journal*, *339*(4), b2700. https://doi.org/10.1136/bmj.b2700

Marks, E., Smith, P., & McKenna, L. (2019). Living with tinnitus and the health care journey: An interpretative phenomenological analysis. *British Journal of Health Psychology*, *24*(2), 250–264. https://doi.org/10.1111/bjhp.12351

Martinez, C., Wallenhorst, C., McFerran, D., & Hall, D. A. (2015). Incidence rates of clinically significant tinnitus: 10-year trend from a cohort study in England. *Ear and Hearing*, *36*(3), e69–e75. https://doi.org/10.1097/AUD.0000000000000121

McFerran, D., Hoare, D. J., Carr, S., Ray, J., & Stockdale, D. (2018). Tinnitus services in the United Kingdom: A survey of patient experiences. *BMC Health Services Research*, *18*(1), 110. https://doi.org/10.1186/s12913-018-2914-3

McFerran, D. J., Stockdale, D., Holme, R., Large, C. H., & Baguley, D. M. (2019). Why is there no cure for tinnitus? *Frontiers in Neuroscience*, *13*, 802. https://doi.org/10.3389/fnins.2019.00802

Meyer, C., Hickson, L., Lovelock, K., Lampert, M., & Khan, A. (2014). An investigation of factors that influence help-seeking for hearing impairment in older adults. *International Journal of Audiology*, *53*(sup1), S3–S17. \https://doi.org/10.3109/14992027.2013.839888

Naughton, P. (2004). The quest for quiet: people's experience of tinnitus in Ireland: A research study for the Irish tinnitus association. https://www.corkdeaf.ie/wp-content/uploads/2014/03/quest-for-quiet.pdf

Newall, P., Mitchell, P., Sindhusake, D., Golding, M., Wigney, D., Hartley, D., Smith, D., & Birtles, G. (2001). Tinnitus in older people: It is a widespread problem. *The Hearing Journal*, *54*(11), 14–18. https://doi.org/10.1097/01.hj.0000293149.86219.30

Newman, C. W., Sandridge, S. A., Bea, S. M., Cherian, K., Cherian, N., Kahn, K. M., & Kaltenbach, J. (2011). Tinnitus: Patients do not have to 'just live with it. *Cleveland Clinic Journal of Medicine*, *78*(5), 312–319. https://doi.org/10.3949/ccjm.78a.10136

Ouzzani, M., Hammady, H., Fedorowicz, Z., & Elmagarmid, A. (2016). Rayyan—a web and mobile app for systematic reviews. *Systematic Reviews*, *5*(1), 210. https://doi.org/10.1186/s13643-016-0384-4

Pryce, H., Hall, A., Shaw, R., Culhane, B.-A., Swift, S., Straus, J., & Claesen, B. (2018). Patient preferences in tinnitus outcomes and treatments: A qualitative study. *International Journal of Audiology*, *57*(10), 784–790. https://doi.org/10.1080/14992027.2018.1484184

Rademaker, M., Stegeman, I., Brabers, A., de Jong, J., Stokroos, R., & Smit, A. (2021). Differences in characteristics between people with tinnitus that seek help and that do not. *Scientific Reports*, *11*(1), 22949–23013. https://doi.org/10.1038/s41598-021-01632-5

Redmond, S. (2010). *What's that noise. A Profile of Personal and Professional Experience of Tinnitus in NI*. The Royal National Institute for Deaf People (RNID). https://rnid.org.uk/wp-content/uploads/2020/10/Whats-that-noise.pdf

Sanchez, L., & Stephens, D. (2000). Survey of the perceived benefits and shortcomings of a specialist tinnitus clinic. *Audiology*, *39*(6), 333–339. https://doi.org/10.3109/00206090009098014

Schofield, P. E., Butow, P. N., Thompson, J. F., Tattersall, M., Beeney, L., & Dunn, S. (2003). Psychological responses of patients receiving a diagnosis of cancer. *Annals of Oncology*, *14*(1), 48–56. https://doi.org/10.1093/annonc/mdg010

Scott, B., & Lindberg, P. (2000). Psychological profile and somatic complaints between help-seeking and non-help-seeking tinnitus subjects. *Psychosomatics*, *41*(4), 347–352. https://doi.org/10.1176/appi.psy.41.4.347

Searchfield, G. (2011). A commentary on the complexity of tinnitus management: Clinical guidelines provide a path through the fog. *Evaluation & the Health Professions*, *34*(4), 421–428. https://doi.org/10.1177/0163278710392983

Sheppard, A., Ishida, I., Holder, T., Stocking, C., Qian, J., & Sun, W. (2022). Tinnitus assessment and management: A survey of practicing audiologists in the United States and Canada. *Journal of the American Academy of Audiology*, *33*(02), 075–081. https://doi.org/10.1055/s-0041-1736576

Sindhusake, D., Mitchell, P., Newall, P., Golding, M., Rochtchina, E., & Rubin, G. (2003). Prevalence and characteristics of tinnitus in older adults: The blue mountains hearing study. *Int J Audiol*, *42*(5), 289–294. https://doi.org/10.3109/14992020309078348

Smith, S. L., & Fagelson, M. (2011). Development of the self-efficacy for tinnitus management questionnaire. *Journal of the American Academy of Audiology*, *22*(7), 424–440. https://doi.org/10.3766/jaaa.22.7.4

Stegeman, I., Eikelboom, R., Smit, A., Bucks, R., Baguley, D., Stokroos, R., Bennett, B., Tegg-Quinn, S., Hunter, M., & Atlas, M. (2021). Tinnitus and its associations with general health, mental health and hearing loss in a population study In. *Tinnitus-an interdisciplinary approach towards individualized treatment: Towards understanding the complexity of tinnitus*. Elsevier. https://www.sciencedirect.com/science/article/abs/pii/S0079612321000236?via%3Dihub

The Association of the Scientific Medical Societies (2015). *German S3 guideline 017/064: Chronic tinnitus [AWMF-Register nr. 017/064 Klasse: S3 Chronischer tinnitus]*. AWMF. https://register.awmf.org/assets/guidelines/017-064l_S3_Chronischer_Tinnitus_2021-09_1.pdf

The Royal National Institute for Deaf People (RNID) (2019). *Tuning out tinnitus: The experiences of people in Scotland seeking information and support to reduce the impact of tinnitus in everyday life*. The Royal National Institute for Deaf People (RNID). https://rnid.org.uk/wp-content/uploads/2020/05/Tinnitus-report-17-Dec-19-FINAL.pdf

Tricco, A. C., Lillie, E., Zarin, W., O'Brien, K. K., Colquhoun, H., Levac, D., Moher, D., Peters, M. D., Horsley, T., Weeks, L., Hempel, S, Akl, E. A., Chang, C., McGowan, J., Stewart, L., Hartling, L., Aldcroft, A., Wilson, M. G., Garritty, C., & Lewin, S. (2018). PRISMA extension for scoping reviews (PRISMA-ScR): Checklist and explanation. *Annals of Internal Medicine*, *169*(7), 467–473. https://doi.org/10.7326/M18-0850

Tunkel, D. E., Bauer, C. A., Sun, G. H., Rosenfeld, R. M., Chandrasekhar, S. S., Cunningham, E. R., Archer, S. M., Blakley, B. W., Carter, J. M., Granieri, E. C., Henry, J. A., Hollingsworth, D., Khan, F. A., Mitchell, S., Monfared, A., Newman, C. W., Omole, F. S., Phillips, C. D., Robinson, S. K., & Taw, M. B. (2014). Clinical practice guideline tinnitus executive summary. *Otolaryngology–Head and Neck Surgery*, *151*(4), 533–541. https://doi.org/10.1177/0194599814547475

Verbeek, J. (2004). Patient satisfaction: Is it a measure for the outcome of care or the process of care? *Journal of Clinical Epidemiology*, *57*(2), 217–218. https://doi.org/10.1016/j.jclinepi.2003.07.006

Verbeek, J., Sengers, M. J., Riemens, L., & Haafkens, J. (2004). Patient expectations of treatment for back pain: A systematic review of qualitative and quantitative studies. *Spine (Phila Pa 1976)*, *29*(20), 2309–2318. https://doi.org/10.1097/01.brs.0000142007.38256.7f

Webster, K., Cella, D., & Yost, K. (2003). The functional assessment of chronic illness therapy (FACIT) measurement system: Properties, applications, and interpretation. *Health and Quality of Life Outcomes*, *1*(1), 79. https://doi.org/10.1186/1477-7525-1-79

West, P. D. (1999). Effective treatment for tinnitus: Audit of a district general hospital service. *Journal of Audiological Medicine*, *8*(2), 92–100. http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=emed6&NEWS=N&AN=29386144

Wray, N. (2021). This is my silence: Please listen. *The Hearing Journal*, *74*(5), 14–16. https://doi.org/10.1097/01.hj.0000752300.64792.b4

Wray, N., Broomhead, E., & Stoclcdale, D. (2017). General Practitioner support for tinnitus - a survey of patient experience, 1st WORLD Tinnitus Congress and XII International Tinnitus Seminar 22-24 May 2017, WARSAW. *Journal of Hearing Science*, *7*(2), 167–167. https://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,shib&db=jlh&AN=127380441&site=ehost-live&custid=s3358796

Zarenoe, R., & Ledin, T. (2014). Quality of life in patients with tinnitus and sensorineural hearing loss. *B-ent*, *10*(1), 41–51. https://pubmed.ncbi.nlm.nih.gov/24765828/