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Abstract

Purpose: The aim of this study was to describe the audiological test results from a sample of 60 adults with self-reported misophonia.

Method: Audiological testing was completed prior to participant randomization in a controlled trial for misophonia treatment. Participants completed the Inventory of Hyperacusis Symptoms Survey (IHS), the Tinnitus and Hearing Survey (THS), the Misophonia Questionnaire (MQ), and behavioral and objective audiometric measures.

Results: Hearing thresholds were less than 25 dBHL for 97% of the participants. Loudness Discomfort Levels (LDL) for tonal stimuli suggested hyperacusis in 25% of the sample. Total scores on the IHS indicated 12% met the clinical cutoff for hyperacusis, and on the THS 27% experienced problems with tinnitus, 77% hearing, and 53% sound tolerance. On the MQ, 37% indicated mild levels of misophonia and 58% indicated moderate levels. For speech in noise testing, a mild signal-to-noise ratio (SNR) loss was present for 15% of participants. Most of the participants had present Distortion Product Otoacoustic Emissions (DPOAEs).

Conclusions: Audiological data on individuals with misophonia is lacking. In this paper we present results from audiological testing on 60 adults with self-reported misophonia. Most had normal peripheral hearing sensitivity based on pure tone audiometry and DPOAE measures, some had difficulties with sound sensitivities and understanding speech in noise, self-report indicated problems with hyperacusis, tinnitus, and hearing difficulty.

Misophonia is a recently recognized condition characterized by strong emotional reactions to common place repetitive noises such as chewing, breathing, and clicking (Jager et al., 2020 a). The first empirical studies emerged as recent as the last decade (e.g., Edelstein et al. 2013; Schröder et al., 2013). To date, misophonia has not been listed within any diagnostic classification system. However, experts have proposed diagnostic criteria, including: (a) an intense emotional response to certain "trigger" sounds, (b) consistent evocation of anger, irritation, or disgust, (c) behaviors aimed at avoiding these triggers or enduring them with significant discomfort, (d) perceived loss of emotional control when the trigger sounds are unavoidable, and (e) notable functional impairment due to either avoidance of or reactions to these sounds (Jager et al., 2020a: Swedo et al., 2022). It is estimated that 18 to 20% of individuals report misophonia symptoms that cause distress and impairment (Vitoratou et al., 2023; Brennan et al., 2024), but the prevalence of clinically significant misophonia remains unknown.

Misophonia was initially identified by audiologists (Jastreboff & Jastreboff, 2001) and has been associated with tinnitus and hyperacusis, other sound intolerance disorders. Tinnitus is understood as a perceptual ringing or hissing in the ear, which for some can be accompanied by a considerable degree of distress. Compared to misophonia, tinnitus does not have a specific external source (Hayes et al., 2014). Hyperacusis is characterized as an unusual sensitivity to sound or sound volume that others typically find normal (Baguley, 2003). While the distress that accompanies the two phenomena is described similarly, misophonia is triggered by specific sounds, while hyperacusis triggers appear more general and related to volume. To date, much of the research has relied on self-report to understand the co-occurrence of other sound tolerance disorders and misophonia. A recent study by Jager et al., (2020a) revealed that in a sample of

575 participants with misophonia less than two percent had been previously diagnosed with tinnitus and less than one percent with hyperacusis. However, another study found that hyperacusis symptoms were self-reported in 71% of individuals with misophonia (Enzler et al., 2021).

Currently, classifying misophonia proves challenging as it intersects various disciplines including audiology, neurology, and psychiatry, without fitting neatly into any one category. As new research continues to emerge, current experts call for an interdisciplinary approach to the study of misophonia (Swedo et al., 2022). From an audiological perspective, the research remains limited. In one study hearing assessments along with a test of Loudness Discomfort Levels (LDLs) (Siepsiak et al., 2022) found no differences in audiological functioning between those with misophonia, auditory over responsivity (e.g., hyperacusis), and healthy controls. In a retrospective chart review of routine care for 257 patients seeking help for tinnitus and/or hyperacusis, 23% were identified with misophonia (Aazh et al., 2022). Of those with misophonia, 59% did not have hearing loss and uncomfortable loudness levels were found to be significantly lower compared to those without misophonia. Research using electrophysiological measures found significant differences in latencies of auditory evoked potentials (P1/N1)for those with misophonia compared to healthy controls, suggesting a sound processing deficit at the level of the auditory cortex (Aryal & Prabhu, 2024). A case study of an individual with misophonia found hearing thresholds within normal limits and no hyperacusis based on loudness discomfort levels (Vanaja & Abigail, 2020). Aryal and Prabhu (2023) raised the need for assessment protocols that include subjective and objective hearing measures to help understand the clinical presentation of misophonia. Assessment of audiological functioning would be a valuable step in diagnosis and treatment planning, yet audiological testing is often not included in researching an intervention for misophonia (Muñoz et al., under review).

The data presented in this study are from an audiological assessment of 60 adults who enrolled in a randomized clinical trial comparing psychosocial treatments for misophonia. As part of the intake process an extensive audiological battery was collected including behavioral and objective test measures to gain a clearer clinical picture of adults with clinical levels of misophonia.

Methods

Participants and Procedures

Audiological data were collected in the audiology clinic and the questionnaire data were collected in the psychology clinic at Utah State University (USU) from November 4, 2022 – November 17, 2023. Ethical approval was obtained from the Institutional Review Board of USU (protocol #12981), and all participants provided written informed consent.

Participants were assessed for eligibility in two steps. First, they completed an online questionnaire to determine eligibility for an initial study appointment. Eligible participants were 18 or older, seeking help for misophonia, able to attend clinic assessments, and had sound sensitivities greater than mild (SS $\geq$ 5) on the Misophonia Questionnaire (MQ; Wu et al., 2014). Two hundred thirty-two individuals met criteria and were contacted; 75 responded and attended the initial appointment.

In the next step, participants attended a clinical interview with trained psychology graduate students, supervised by a psychologist. Participants were given the Duke Misophonia Interview (DMI; Rosenthal et al., 2021; Guetta et al., 2022) to assess the presence and severity of misophonia. A total score of 20 or higher on the DMI was needed to be eligible. Nine individuals were excluded for subclinical misophonia (DMI total ≤ 20), two for trauma-triggered sound sensitivities, and one for volume-related sensitivities. Participants also received a diagnostic clinical interview to assess co-morbid psychiatric diagnoses. Psychological comorbidity was not an exclusion criterion, except for impairments that would prevent participation (e.g., profound neurological impairment) or surpass misophonia as the main issue (e.g., active self-harm). After the interview, two participants no longer wanted treatment for misophonia. The final sample consisted of 60 treatment seeking participants with misophonia.

After the interview, the participants proceeded to complete two audiological questionnaires and a comprehensive hearing evaluation, administered by two audiology graduate research assistants under the supervision of an audiologist. Participants were given a monetary incentive at three assessment time points (i.e., baseline, end of treatment, follow-up) for time spent completing assessments.

Questionnaires

Participants completed the following questionnaires independently using an iPad during the initial intake appointment.

Misophonia Questionnaire (MQ; Wu et al., 2014) assesses misophonia through three distinct subscales: the Misophonia Symptom Scale, the Misophonia Emotions and Behaviors Scale, and the Misophonia Severity Scale. The Symptom Scale consists of seven items that assess the frequency of misophonia symptoms (e.g., "*people eating*") on a scale from 0 (*not at all true*) to 4 (*always true*). The Emotions and Behaviors Scale includes 10 items that measure emotional and behavioral responses to misophonia symptoms (e.g., "*become angry*") using the same scoring scale. The total MQ score is derived from the sum of the scores on these two scales, with total scores ranging from 0 to 68. The reliability of the MQ total scale was within an acceptable range

(Cronbach's coefficient $\alpha = .74$). The MQ also includes a single item that asks individuals to rate the overall severity of misophonia symptoms on a scale from 1 (*minimal*) to 15 (*very severe*), with scores of 7 or higher indicating clinically significant symptoms. The MQ was used to determine initial study eligibility at sign up and was also used a second time to assess misophonia symptoms following the clinical interview. Scores obtained at the second assessment period are reported in the present study.

Inventory of Hyperacusis Symptoms Survey (Greenberg et al., 2018) consists of 25 questions on a four-point Likert scale for a possible total score of 100 points. The questionnaire explores loudness perception, negative emotion and fear, and social, cognitive, psychological and occupational functioning. Criteria for clinical significance is a score of 69 points or greater ("*somewhat of a problem*" to "*extreme problem*").

Tinnitus and Hearing Survey (Henry et al., 2015) consists of 10 questions divided into three sections: (A) Tinnitus, (B) Hearing, and (C) Sound Tolerance. Items are rated on a Likert scale from zero to four (0 = "*No, not a problem*" to 4 = "*Yes, a very big problem*") based on perceptions over the previous week. Sections A and B each have four questions and a total of 16 points possible in each section. Section C has two questions; however, the need to respond to the second question depends on the response to the first question in this section (i.e., response of 1, 2, 3, or 4). There is not a cutoff score for clinical significance.

Hearing Assessment Components

Tests were completed in a double-walled soundproofed booth using calibrated equipment (i.e., Madsen Astera2 clinical audiometer, GSI Grason Stadler Tympanometer, Otodynamics Echoport or Otoport systems). The following components were included in the test battery following otoscopy in each ear.

Middle ear measures tympanometry, and measurement of acoustic reflex thresholds (1,000 kHz ipsilaterally and contralaterally).

Pure tone audiometry was completed to obtain hearing thresholds for air (0.25, 0.5, 1.0, 2.0, 4.0, 8.0 kHz) and bone (0.25, 0.5, 1.0, 2.0, 4.0) conduction via modified Hughson and Westlake method (Carhart & Jerger, 1959). Hearing level was determined using the four-frequency (0.5, 1.0, 2.0, 4.0 kHz) pure tone average (PTA).

Speech audiometry was completed using insert earphones and recorded word lists. Tests included speech recognition thresholds, percent correct for word recognition in quiet (NU-6 [Northwestern University Auditory Test Number Six] word lists presented at 40 dB SL (sensation level); Tillman & Carhart, 1966), and signal-to-noise ratio (SNR) loss for speech recognition in noise (Quick Speech-in-Noise [QuickSIN]; Killion et al., 2004) presented at 70 dB HL. For speech in noise, the SNR loss was interpreted using age-based norms for participants with hearing thresholds within normal limits (Holder et al., 2018).

Loudness discomfort levels (LDL) were obtained for warble tones and speech stimuli (Contour Test of Loudness Perception guideline: Cox et al., 1997). A mean LDL cutoff of 90 dB HL or lower (.25, .5, 1.0. 2.0, 4.0 kHz) was used as an indicator of hyperacusis (Vidal et al., 2022).

Distortion product otoacoustic emissions (DPOAEs) were measured using 65/55 dB SPL stimulus levels and F2 frequencies (1,000-5657 kHz) were plotted on a DP-gram to show responses relative to norms (Gorga et al, 1997). Two participants did not receive DPOAE testing due to a problem accessing the equipment.

Analysis

Audiological data were de-identified and extracted into an Excel file and then analyzed in SPSS (IBM Statistical Package for the Social Sciences) version 29.0. Descriptive statistics were obtained (frequencies, means, standard deviations). For the questionnaires, Cronbach's coefficient alpha was used to determine reliability for internal consistency for the study sample.

Results

Participants included 60 adults (age: M = 33.8 years; range = 18-67). Most were White (95%), non-Hispanic (97%), women (70%), with an income of $100,000 or more per year (six participants did not provide their income). Table 1 provides demographic information. During the misophonia interview, most of the participants (93%) reported misophonia onset during childhood or adolescence (eight before age six, 26 between six to 10 years, and 22 between 11 to 18 years), only 7% (n=4) reported onset after age 18 years.

Audiological Self-Report Questionnaires

The mean MQ total score in this treatment-seeking sample was 38.05 (SD = 8.13), which indicates elevated misophonia symptoms compared to the general population. For context, the average score reported for the MQ norming sample, comprised of college students was 17.81 (SD = 9.17) for the individuals with subclinical misophonia and 31.21 (SD = 7.64) for individuals with clinically significant misophonia (see Wu et al., 2014). Scores for misophonia severity on the MQ predominately ranged from 4 (mild) to 11 (severe sound sensitivities), with the exception of one individual reporting a score of 1 indicating a lack of perceived impairment from misophonia symptoms at the time of intake. Five percent of the sample (n = 3) endorsed MQ severity scores that ranged from minimal to mild, while approximately 37% of the sample indicated MQ severity scores that were just above "mild" (scores 5 to 6). Fifty-eight percent reported severity scores of 7 or greater (indicating moderate sound sensitivities) on the MQ, suggesting the majority of the sample met the previously established clinically significant threshold (see Appendix A). On average MQ misophonia severity was 6.83 (*SD* = 1.69).

Responses for the IHS were on a Likert scale (i.e., *not at all*, *a little*, *somewhat*, *very much so*) for each item. The items had high reliability for internal consistency (Cronbach's coefficient α = .95) for this sample. The IHS total score ranged from 25 to 94 (M=50.02; SD=16.59) and 12% scored above the cutoff for clinical significance. Of those, two were in the "*somewhat of a problem*" category, three were in the "*quite a bit of a problem*" category, and two were in the "*extreme problem*" category. For the 25 items on the measure, half or more of the particpants reported experiencing *a little* or more difficulty on 68% (17/25) of the items. These results show problems people are experiencing because of their sensitivity to sounds, such as feeling irritated, having difficulty concentrating, or feeling frustrated.

Responses for the THS were on a Likert scale (i.e., "*no, not a problem*," "*yes, a small problem*," "*yes, a moderate problem*," "*yes, a big problem*," "*yes, a very big problem*") based on participants' perceptions of their difficulties during the previous week. The items had good to excellent reliability for internal consistency (Cronbach's coefficient α = .84 to .91 for Tinnitus and Hearing subscales) for this sample. Total scores for the tinnitus section indicated 27% of participants had a *small* to a *moderate problem* (M = 0.80; SD = 1.66). Total scores for the hearing section indicated 77% of participants had a *small* to a *very big problem* (M = 3.83; SD = 3.96). For the first question related to sound tolerance, 53% of participants indicated a *small* to a *very big problem* (M = 1.37; SD = 1.71). Half of the participants responded to the second question in this section (i.e., they reported a problem with sound tolerance on the previous question), and of those, 66% reported a small or moderate problem. These results show problems people are experiencing such as difficulty concentrating because of tinnitus, difficutly hearing in noisy places, or understanding what is being said on the television.

Hearing Test

Table 2 provides the audiometric test results. Most of the participants (97%) had hearing within normal limits, defined as hearing thresholds less than 25 dB HL based on their four-frequency PTA, and 3% (2/60) had a mild bilateral sensorineural hearing loss. Based on the PTA there was not a significant difference $t(118) = 0.68$, $p = 0.495$, between the right (M = 7.56; SD = 6.86) and left (M = 8.43; SD = 7.07) ears. Most participants had normal Type A tympanograms and two had hypermobility of the right tympanic membrane. Acoustic reflex thresholds at 1,000 Hz ranged from 75 to 105 dB ipsilaterally and 80 to 105 dB contralaterally, for the right (ipsilateral M = 88.04, SD = 6.78; contralateral M = 95.93, SD = 6.38) and left (ipsilateral M = 88.91, SD = 6.98; contralateral M = 93.67, SD = 6.77) ears. For participants with hearing thresholds of less than 25 dB HL, amplitudes for DPOAEs were predominantly present at most frequencies; see Figure 1.

Word recognition ability in quiet was excellent (right M = 98.63, left M = 98.92). The mean SNR loss for the right ear was 1.28 (SD = 1.79) and 1.89 (SD = 1.63) for the left ear; 15% of participants with normal hearing thresholds had a mild SNR loss (one ear n = 8; both ears n = 1). For the two participants with mild bilateral sensorineural hearing loss, one had a mild and the other a moderate SNR loss. One participant did not complete speech-in-noise testing; the test was not available due to a scheduling issue.

Tonal LDLs ranged from 70 to 120 dB HL and speech LDLs ranged from 75 to 110 dB HL. Table 3 shows the audiometric results for the sub-set of 13 participants with unilateral or bilateral mean tonal LDLs below 90 dBHL, including one participant who could not tolerate testing for frequencies above 1000 kHz (testing was discontinued). Notably, only one participant scored above the cut-off for hyperacusis on the IHS with a score suggestive of severe hyperacusis.

Discussion

Few applied misophonia studies have considered hearing assessment within their research and currently, there is not a recommended audiological protocol for assessing individuals with misophonia. In this paper we described audiological characteristics for a sample of 60 adults with mild to moderate levels of misophonia. We examined responses to three questionnaires that assessed for misophonia, tinnitus, and hyperacusis, and the results from a comprehensive battery of tests to assess hearing. Research for misophonia is evolving and insights from this study can inform considerations for future research and clinical practice.

Audiometric findings in our sample provide insights for consideration in future research. Most of the participants had hearing within normal limits (< 25 dB HL). In other misophonia treatment research, one case report measured hearing thresholds and found hearing levels within normal limits (Vanaja & Abigail, 2020), and one randomized controlled trial used self-report and did not identify anyone with hearing acuity problems (Jager et al., 2020_b). In our sample, 15% of participants with normal hearing thresholds had a mild SNR loss for speech in noise and three-quarters self-reported experiencing hearing difficulties on the hearing sub-scale of the THS. In an online study to explore misophonia triggers (N = 253), 22% self-reported difficulty hearing in noise (Enzler et al., 2021). These findings suggest challenges for many participants that may not be explained by their audiometric results. Further research is needed to explore auditory perception difficulties for this population.

Two other sound tolerance disorders, hyperacusis and tinnitus, have been found to co-occur with misophonia. In our sample, indicators of hyperacusis differed based on the measurement (LDL 25%; IHS 12%; THS 53%). This is not surprising given the approach of each measurement; however, this presents challenges clinically and in research for ability to compare across studies and clinical environments. One misophonia treatment study, a case report, measured LDLs and did not identify hyperacusis although the client reported being previously diagnosed with hyperacusis in another clinic (Vanaja & Abigail, 2020). In our sample, 27% reported problems with tinnitus on the THS. In a randomized controlled trial (RCT), Jager at al. (2020b) only identified five percent with tinnitus, and this was based on self-report of a previous diagnosis. In a retrospective study of patients seeking treatment for tinnitus, hyperacusis, and/or misophonia, 24% had misophonia only and 5% had misophonia, tinnitus, and hyperacusis (Aahz et al., 2024). Yet in another study 71% self-reported hyperacusis in addition to misophonia (Enzler et al., 2021).

Our study provides additional audiometric information for adults with misophonia. There are limitations, however, that should be considered for inclusion in future research. We did not include assessments such as electrophysiological, auditory processing, and otoacoustic emission suppression. We also did not further assess tinnitus when it was identified on the THS to better understand severity or match tinnitus frequency, aspects important for treatment planning. Our study only included adults and given the onset is most common in childhood or adolescence, and the increase in severity of symptoms over time, research and guidance for clinical practice is needed for these populations. Additionally, the majority of the sample reported mild to moderate levels of misophonia, indicating a need for further assessment among individuals with a broad range misophonia severity. Further research is also needed to compare audiometric characteristics of individuals with varying levels of misophonia severity to healthy controls to inform recommendations for audiological testing protocols. Furthermore, the demographics of our sample was comprised predominately of wealthy White women and did not represent the broader demographics of the United States, limiting generalizability. To better understand the factors influencing experiences of those suffering from misophonia, future treatment research would benefit from considering audiological, psychological, and medical co-morbidities within a broader demographic, including age, race, and ethnicity.

Conclusion

There is a lack of misophonia treatment research that has included hearing assessment and there are no current guidelines that recommend a protocol for audiological evaluation. We described audiological characteristics for a sample of 60 adults with misophonia and found most had hearing sensitivity within normal limits and excellent word recognition in quiet. There was increased difficulty for understanding speech in noise, as well as experiencing problems with tinnitus and hyperacusis. Additional audiological tests should be considered in future research, as well as including younger ages and broader demographic representation.

Data Availability Statement

The datasets generated and analyzed during the current study are available from the corresponding author on reasonable request.

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Figure Legend

Figure 1. Figure 1. DP-Grams showing amplitude for F2 frequencies. The grey shaded area represents the normative range (95th to 5th percentile) and the hashed areas are 90th to 10th percentile for amplitude across the frequencies.

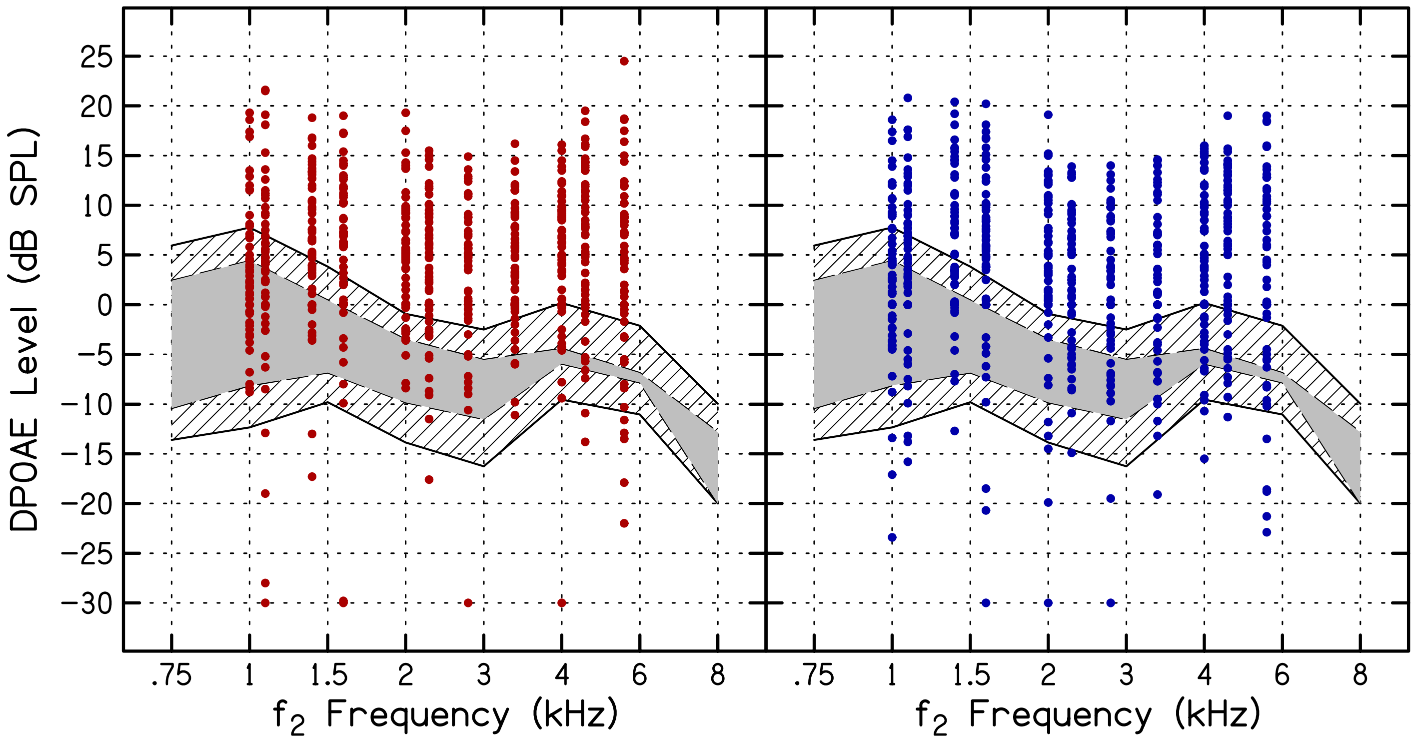

Table 1. Demographics Frequency of Response

Demographic information	**% (*n*)**
Gender identity	
Female	70 (42)
Male	23 (14)
Non-binary	5 (3)
Prefer to self-identify	2 (1)
Race	
White	95 (57)
Asian	3 (2)
Black	2 (1)
Ethnicity	
Not Hispanic or Latino	97 (58)
Hispanic or Latino	3 (2)
Income	
$100,00 or more	37 (22)
$80,000 - $99,999	8 (5)
$60,000 - $79,999	12 (7)
$40,000 - $59,999	12 (7)
$20,000 - $39,999	15 (9)
Less than $20,000	7 (4)

Table 2. Audiological Data

Test	**M (SD)**		**% (*n*)**	
	Right	Left	Right	Left
PTA	7.56 (6.86)	8.43 (7.07)		
Tympanogram Type A			97% (57)	100% (59)
Ipsilateral acoustic reflex threshold	88.04 (6.78)	88.91 (6.95)		
Contralateral acoustic reflex threshold	93.67 (6.77)	95.93 (6.38)		
Word recognition score in quiet	98.63 (3.36)	98.65 (3.42)		
QuickSIN speech in noise				
Normal scores			90% (53)	86% (51)
Mild SNR loss			9% (5)	12% (7)
Moderate SNR loss			2% (1)	2% (1)
Tonal LDL	98.66 (9.02)	100.27 (9.31)		
Speech LDL	93.17 (7.67)	93.41 (8.14)		

PTA = pure tone average for four frequency (0.5, 1.0, 2.0, 4.0 kHz) air conduction thresholds; acoustic reflex thresholds measured at 1,000 Hz; word recognition in quiet using the NU-6 recorded word lists; LDL = loudness discomfort level measured using warble tones and monitored live voice.

Table 3. Audiometric profile for participants with unilateral or bilateral mean tonal LDLs below 90 dB HL

ID	Age	PTA dB HL	Tymp type	ART 1,000 Hz	DPOAE	LDL tonal	LDL speech	WR quiet	SNR loss	IHS total score	THS total scores
2004	47	R: 0 L: 1.25	R: A L: A	R I/C: 85/100 L I/C: 95/105	R: present L: present	R: 88 L: 90	R: 80 L: 80	R: 100% L: 100%	R: 0 L: 1	33	T/H/ST: 0/0/0
2009	49	R: 11.25 L: 7.5	R: A L: A	R I/C: 95/95 L I/C: 95/95	R: present L: present	R: 79 L: 82	R: 87 L: 81	R: 100% L: 100%	R: -2 L: 1.5	53	T/H/ST: 0/2/0
2012	22	R: -2.5 L: 2.5	R: A L: A	R I/C: 90/95 L I/C: 90/95	R: present L: present	R: 78 L: 79	R: 85 L: 85	R: 100% L: 93%	R: 2 L: 2	49	T/H/ST: 0/4/0
2019	30	R: 8.75 L: 12.5	R: A L: A	R I/C: 80/100 L I/C: 80/100	R: present L: present	R: 87 L: 96	R: 95 L: 95	R: 90% L: 87%	R: 4 L: 1	49	T/H/ST: 0/7/4
2024	25	R: 8.75 L: 7.5	R: A L: A	R I/C: 90/105 L I/C: 100/NR	R: present L: present	R: 89 L: 86	R: 85 L: 85	R: 100% L: 100%	R: -1 L: 2	45	T/H/ST: 0/0/1
2034	20	R: 2.5 L: -3.75	R: A L: A	R I/C: NR/NR L I/C: 85/NR	R: present L: present	R: 87 L: 88	R: 95 L: 90	R: 100% L: 100%	R: 2 L: 4	50	T/H/ST: 5/10/0
2037	19	R: 0 L: 10	R: A L: A	R I/C: 90/DNT L I/C: DNT/DNT	R: absent L: present	R: 90 L: 88	R: 85 L: 80	R: 100% L: 100%	R: 3 L: 0	80	T/H/ST: 0/4/3
2038	24	R: 5 L: 13.75	R: A L: A	R I/C: 85/NR L I/C: 90/105	R: present L: present	R: 88 L: 90	R: 90 L: 85	R: 100% L: 100%	R: 3 L: 2	52	T/H/ST: 0/5/0
2039	49	R: 11.25 L: 12.5	R: A L: A	R I/C: 90/105 L I/C: 95/105	R: present L: present	R: CNT L: CNT	R: 105 L: 100	R: 100% L: 100%	R: 1 L: 1	67	T/H/ST: 0/7/5
2044	24	R: 0 L: 1.25	R: A L: A	R I/C: 85/95 L I/C: 90/95	R: present L: present	R: 93 L: 89	R: 90 L: 85	R: 100% L: 100%	R: 4 L: 5	28	T/H/ST: 0/3/0
2051	27	R: 3.75 L: 10	R: A L: A	R I/C: 85/90 L I/C: 85/90	R: present L: present	R: 89 L: 95	R: 95 L: 90	R: 100% L: 100%	R: 1 L: 2	49	T/H/ST: 1/2/0
2058	34	R: 11.25 L: 13.75	R: A L: A	R I/C: 95/NR L I/C: 95/NR	R: present L: present	R: 86 L: 85	R: 80 L: 80	R: 100% L: 100%	R: 2 L: 1	67	T/H/ST: 5/12/6

2073	42	R: 11.25 L: 7.5	R: A L: A	R I/C: NR/NR L I/C: 105/NR	R: partial L: present	R: 85 L: 84	R: 75 L: 75	R: 100% L: 100%	R: 1 L: 1	38	T/H/ST: 2/5/0

Abbreviations: PTA = pure tone average; dB HL = decibel hearing level; Tymp = tympanogram; R = right; L = left; I = ipsilateral; C = contralateral; DPOAE – distortion product otoacoustic emission; LDL = loudness discomfort level; WR = word recognition; SNR = signal-to-noise ratio; HIS = Inventory of Hyperacusis Symptoms Survey; THS = Tinnitus and Hearing Survey

Appendix A

Distribution of Misophonia Questionnaire Severity Scores