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A Comparison of Misophonia and Autistic Traits in Parents of Children With and Without Autism Spectrum Disorder*

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ABSTRACT

Objective: This study aims to compare misophonia levels and autistic traits between parents of children diagnosed with autism spectrum disorder (ASD) and parents of typically developing children.

Methods: Parents of children diagnosed with ASD who presented to the Child and Adolescent Psychiatry outpatient clinic (n=56) and parents of typically developing children (n=56) were included in the study. The Childhood Autism Rating Scale (CARS) was administered to the children with ASD. All participating parents completed the Autism Spectrum Quotient (AQ) and the Amsterdam Misophonia Scale–Revised (AMISOS-R).

Results: The rate of reporting throat sounds as a misophonic trigger was higher among parents of children with ASD (p=0.004). Weak but significant positive correlations were found across all participants between the AMISOS-R total score and the AQ total score, the attention switching subscale score, and the communication subscale score (r=0.275, p=0.003; r=0.266, p=0.005; r=0.35, p <0.001, respectively). Among parents of children with ASD, the AMISOS-R total score was positively correlated with items 3, 5, and 9 of the CARS (p <0.05).

Conclusion: Our findings support potential associations between misophonia and ASD, and suggest that misophonia in parents may be related to certain characteristics in the child, such as sensory processing and emotional regulation.

Keywords: Amsterdam Misophonia Scale, autism spectrum disorder, misophonia, sensory processing

INTRODUCTION

Misophonia is a disorder characterized by reduced tolerance to certain sounds and negative emotional reactions (Abramovitch et al. 2024). The most frequently reported triggers were eating sounds, nasal sounds, breathing sounds, rustling sounds, and clicking sounds (Vitoratou et al. 2021). When exposed to triggers, individuals with misophonia experience strong reactions such as autonomic arousal, anger, anxiety, and distress, and they tend to avoid and withdraw from situations in which triggers are present (Zhou et al. 2017).

Although little is known about its epidemiology because it is a recently defined disorder, it is considered to be common. In a study conducted in Türkiye, the prevalence of misophonia was found to be 12.8% (Kılıç et al. 2021). Another study reports that prevalence rates are close to 20% in the population and that 6% experience significant functional impairment (Ferrer-Torres and Giménez-Llort 2022). Misophonia can negatively affect individuals' quality of life and social functioning (Abramovitch et al. 2024).

Neurophysiological models explain misophonia through patterns of increased connected processing between the auditory cortex, the limbic system, and the autonomic nervous system. For example, Jastreboff proposes that trigger sounds elicit an abnormal arousal response via the limbic and sensory systems (Jastreboff and Jastreboff 2023). Misophonia is considered a neurophysiological, psychological, and behavioral phenomenon that arises from strengthened functional links between sensory processing processes and emotional regulation mechanisms (Schröder et al. 2019, Jastreboff and Jastreboff 2023).

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The behavioral perspective conceptualizes misophonia within the framework of avoidance behaviors in response to specific sounds. Accordingly, it is emphasized that methods such as cognitive behavioral therapy, dialectical behavior therapy, and exposure are among the possible treatment approaches (Yılmaz and Hocaoglu 2021).

Although it remains controversial whether misophonia is a distinct mental disorder or a symptom accompanying psychiatric disorders, an increasing number of studies show that misophonia frequently co-occurs with other psychiatric disorders (Taylor 2017, Siepsiak et al. 2020). It can be found particularly in association with disorders such as anxiety disorders, Tourette disorder, attention-deficit/hyperactivity disorder, obsessive compulsive disorder (OCD), and autism spectrum disorder (ASD) (Taylor 2017, Potgieter et al. 2019, Jager et al. 2020, Siepsiak et al. 2020, Yektatalab et al. 2022). Although there are no studies specifically conducted to assess the prevalence of misophonia in individuals diagnosed with autism, a growing number of studies provide evidence suggesting an association between misophonia and autistic traits (Ertürk et al. 2024). A recent review has suggested that misophonia may explain part of the auditory hypersensitivity observed in individuals with autism (Williams et al. 2021). In a study conducted by Jager et al. in a clinical sample of individuals with misophonia, 3% of 575 individuals with misophonia were diagnosed with comorbid ASD (Jager et al. 2020).

The higher prevalence of autistic traits in parents of children with ASD, referred to as the broader autism phenotype (Rubenstein and Chawla, 2018), the acceptance of sensory processing difficulties as part of the broader autism phenotype (Yadon and Vonarx, 2024), and studies examining the relationship between misophonia and autism provided the basis for formulating the hypothesis that the prevalence of misophonia may be higher in parents of children with ASD compared to controls. Although the number of studies examining the relationship between misophonia and autism is increasing, we attribute the lack of studies directly investigating the prevalence of misophonia in individuals with autism to the communication difficulties frequently observed in these individuals, their challenges in expressing internal experiences, and the difficulties in measuring subjective sensory responses. These factors make the collection of data on misophonia in children with ASD methodologically challenging. Because the diagnosis of misophonia relies largely on individuals' subjective reports, assessing this condition in children with autism can be difficult. Accordingly, rather than directly measuring misophonia levels in children with autism, we chose to assess misophonia symptoms in parents. We considered examining misophonia levels in parents to be a more methodologically feasible approach and one that could provide clues regarding possible familial transmission. In this context, investigating the prevalence of misophonia in parents of children with autism may reveal whether there is a difference in the frequency of misophonia between parents of children with autism and parents in the control group; furthermore, identifying a high prevalence of misophonia in parents may support the hypothesis that children with autism may also have similar sensory sensitivities.

In this study, we aimed to compare parents of children with ASD and parents of typically developing children in terms of misophonia and autism symptoms, and to examine the relationship between autism symptoms in children with ASD and misophonia levels in their parents. We hypothesized that parents of children with autism would exhibit higher levels of misophonia symptoms compared to the parents of typically developing children, and that there would be an association between autism symptoms and misophonia.

METHODS

Study Design

Ethical approval for the study, which was conducted in accordance with the principles of the Declaration of Helsinki, was obtained with decision number 12.06.2024/96. The study sample consisted of parents of children diagnosed with autism who presented to our outpatient clinic and parents of typically developing children. The study was conducted between June 15, 2024, and February 15, 2025.

Participants and Data Collection Method

Parents of children with autism were considered the case group in the study and were referred to as such in the manuscript. The control group was composed of parents who presented to our outpatient clinic and whose children were found not to have ASD or any other psychiatric disorder as a result of psychiatric evaluation. However, for their other children who did not present to our outpatient clinic, parents were asked by self-report whether those children had ever received a child psychiatry evaluation for any reason in the past. If any of their children had previously undergone or were currently undergoing a psychiatric assessment and received a psychiatric diagnosis, those parents were excluded from the study. No additional clinician assessment was performed for the other children of parents in the control group, apart from the child who presented to our outpatient clinic. In addition, parents in the control group were also questioned regarding the presence of ASD in first or second-degree relatives, and those with such a history were excluded from the study.

The age range of children with ASD to be included in the study was determined as 2–18 years. Literacy of the participating parents and their voluntary agreement to complete the questionnaires were accepted as inclusion

criteria. Parents in both groups with a history of hearing loss, intellectual disability, ASD, bipolar disorder, psychotic disorder, or dementia were excluded from the study. During the parent selection process, if only one parent presented to the outpatient clinic, the presenting parent was included in the study. In cases where both parents accompanied the child at presentation, a single parent who primarily agreed to participate in the study was included in the sample.

A child and adolescent psychiatrist administered the Childhood Autism Rating Scale through parent interview and child observation. The Autism Spectrum Quotient and the Amsterdam Misophonia Scale–Revised were completed by the parents under clinician supervision.

Power Analysis

Since there was no study in the literature that could be sufficiently closely referenced for our study, a pilot study was first conducted with 15 participants in each group (n=30) to estimate the effect size for the misophonia score variable. With a 95% confidence level (1–α), 95% statistical power (1–β), and an effect size of d=0.709, the minimum required sample size was calculated as 106, with 53 participants in each group.

Measures

Sociodemographic Form; participants were asked about their age, marital status, and whether they had any psychiatric or medical illness.

Amsterdam Misophonia Scale–Revised (AMISOS-R); The AMISOS-R is used to assess misophonia symptoms, was developed by Schröder et al., and its validity and reliability for the 15–45 age range were established by Cakiroglu et al. (Schröder et al. 2013, Cakiroglu et al. 2022). The self-report scale consists of 10 items, and the maximum possible score is 40. Higher scores indicate greater severity of misophonia. Scores between 0 and 10 indicate normal and subthreshold misophonia; scores between 11 and 20 indicate mild misophonia; scores between 21 and 30 indicate moderate misophonia; and scores between 31 and 40 indicate severe misophonia (Cakiroglu et al. 2022).

Autism Spectrum Quotient (AQ); the AQ assesses autism symptoms and the broader autism phenotype in adults with normal intelligence and was developed by Baron-Cohen et al. (Baron-Cohen et al. 2001). The AQ assesses five different areas: social skills, shifting attention, attention to detail, communication and imagination. This 50-question scale has a maximum score of 50. It is a Likert-type self-report questionnaire. The validity and reliability study of the AQ has also been conducted for our population (Köse et al. 2010).

Childhood Autism Rating Scale (CARS); CARS is a scale used for the autism diagnostic process and designed to distinguish children with autism from children with developmental disabilities without autism (Schopler et al. 1980). An expert administers the scale through parent interview and child observation. Consisting of 15 items, this scale yields a total of 60 points. The validity and reliability study conducted by Sucuoğlu et al. was extended by İncekaş-Gassaloğlu et al. with a larger group of participants (İncekaş Gassaloğlu et al. 2016).

Statistical Methods

Categorical variables such as sex, marital status, psychiatric disorder, medical illness, and medication use were expressed as frequencies (percentages). Continuous variables such as age and clinical scale scores were expressed as mean ± standard deviation and median (minimum–maximum). Age, AQ, AMISOS-R, and CARS total and subscale scores were analyzed using the Shapiro–Wilk and Kolmogorov–Smirnov tests to determine whether they conformed to a normal distribution.

To examine the relationships among categorical variables (sex, marital status, psychiatric disorder, medical illness, and medication use), Yates' continuity correction, Fisher's Exact Test, Pearson's chi-square test, and Monte Carlo–corrected Fisher's Exact Test were used, and multiple comparisons were analyzed using the Bonferroni-corrected Z test.

The Mann-Whitney U test was used to compare AMISOS-R scores between the patient and control groups, and the independent samples t-test was used to examine differences in AQ total and subscale scores. Spearman correlation analysis was used to examine the relationships between the AMISOS-R scale and the AQ (total and subscale scores) and CARS (total score and individual items).

One-way analysis of variance (ANOVA) was used for comparisons of normally distributed variables across three or more groups (comparison of AQ and subscale scores according to misophonia severity), and multiple comparisons were performed using the Tamhane test. For comparisons of non-normally distributed variables across three or more groups, the Kruskal–Wallis test was used, and multiple comparisons were performed using Dunn's test.

IBM Statistical Package for Social Sciences (SPSS) program version 23 was used for data analysis, and the level of statistical significance was set at $p < 0.050$.

RESULTS

The groups did not differ in terms of age; the mean age was 36.02±6.6 years in the case group and 38.04±9.28 years in the control group ($p>0.05$). Sex, marital status, and the

Table 1. Comparison of Sociodemographic Variables According to Groups

	Group		Total	Test Statistic	p
	Case	Control			
Sex					
Female	39 (69.6)	29 (51.8)	68 (60.7)	3.03	0.082[a]
Male	17 (30.4)	27 (48.2)	44 (39.3)		
Marital Status					
Married	52 (92.9)	53 (94.6)	105 (93.8)	---	1.000[b]
Divorced	4 (7.1)	3 (5.4)	7 (6.3)		
Medical Illness					
Yes	9 (16.1)	7 (12.5)	16 (14.3)	0.073	0.787[a]
No	47 (83.9)	49 (87.5)	96 (85.7)		
Psychiatric Illness					
Yes	8 (14.3)	3 (5.4)	11 (9.8)	1.613	0.204[a]
No	48 (85.7)	53 (94.6)	101 (90.2)		
Medicine Use					
Yes	7 (12.5)	5 (8.9)	12 (10.7)	0.093	0.760[a]
No	49 (87.5)	51 (91.1)	100 (89.3)		

[a]Yates Correction; [b]Fisher's Exact Test

presence of medical or psychiatric illness were also similar in both groups (p>0.05) (Table 1).

Analyses of the conformity of the data to normal distribution showed that the AQ total score was normally distributed in both the case and control groups (p>0.05). In contrast, the AMISOS-R total score and the AQ subscale scores did not meet the assumption of normality in either group (all p<0.05).

When all participants were evaluated together, the AMISOS-R total score was found to be normally distributed (p=0.074), whereas the AQ total and subscale scores did not show a normal distribution (p<0.05).

In subgroup analyses according to misophonia severity, only the AQ total score showed conformity with normal distribution across all groups (subclinical, mild, moderate, and severe), whereas the AMISOS-R total score and all AQ subscale scores did not meet the assumption of normality in these subgroups (p<0.05).

In the evaluation of CARS scores in children with ASD, the CARS total score was found to be normally distributed (p=0.200), whereas none of the CARS item scores met the assumption of normality (all p<0.001).

Among misophonic triggers, eating sounds, breathing sounds, specific sounds, repetitive clicking sounds, crackling sounds, and environmental sounds were found at similar rates in both groups (p>0.05). The proportion of participants reporting throat sounds as a trigger was 55.4% in the case group and 26.8% in the control group (p=0.004) (Fig. 1).

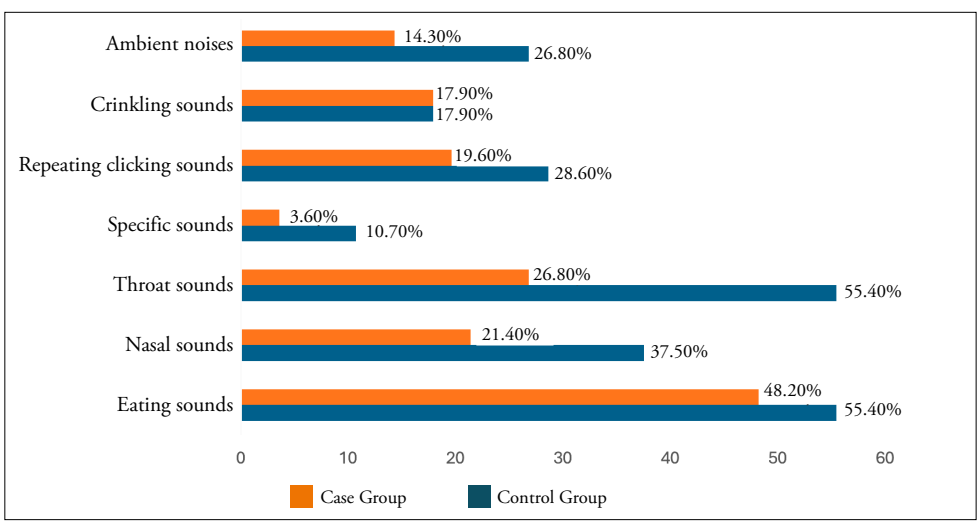

Figure 1. Rates of participants' reported misophonic triggers by group.

Table 2. Comparison of AMISOS-R, AQ Scores and AQ Subscale Scores of The Participants

	Case		Control		p
	Mean ± SD	Median (min-max)	Mean ± SD	Median (min-max)	
AMISOS-R	11.88 ± 7.93	11 (0 - 33)	10.88 ± 8.31	11 (0 - 29)	0.631[a]
AQ	19.32 ± 6.44	19.5 (7 - 38)	18.59 ± 4.96	18 (5 - 28)	0.502[b]
Social Skills	3.36 ± 2.12	3 (0 - 9)	3.09 ± 1.82	3 (0 - 8)	0.627[a]
Attention Switching	4.52 ± 2.04	4.5 (0 - 9)	4.57 ± 1.91	5 (1 - 9)	0.864[a]
Attention to Detail	4.61 ± 1.9	5 (1 - 9)	4.75 ± 2.2	5 (1 - 10)	0.734[a]
Communication	3.27 ± 2.16	3 (0 - 8)	2.64 ± 1.69	2.5 (0 - 6)	0.166[a]
Imagination	3.57 ± 1.74	3 (0 - 8)	3.52 ± 1.61	3 (1 - 8)	0.936[a]

[a]Mann Whitney U Test; [b]Independent Samples t Test
(Abbreviations: AQ; Autism Spectrum Questionnaire, AMISOS-R:Amsterdam Misophonia Scale-Revised Form)

While there was no significant difference between the groups in terms of feelings of anger, disgust, and other emotions in response to misophonic triggers, there was a statistically significant difference between the groups in terms of feeling uneasy (p=0.023). The proportion of participants reporting uneasiness in response to misophonic trigger stimuli was 55.4% in the case group and 33.9% in the control group.

The groups were compared in terms of responses to each item of the misophonia scale. A significant difference was found between the groups for the first item (*How much time per day do you spend thinking about these sounds?*) and the fourth item (*How intense is your feeling of irritability/anger when you hear these sounds?*) (p=0.013). The median values of these items were higher in the case group compared to the control group. No significant difference was found between the two groups for the other items of the scale (p>0.05).

The AMISOS-R scores, AQ total scores, and AQ subscale scores were found to be similar in both groups (Table 2).

A weak positive correlation was found between the AMISOS-R total scores and the AQ total scores of all participants (r=0.275; p=0.003). Weak positive correlations were also found between the total misophonia score and the attention switching and communication subscale scores (Table 3).

There was a difference in mean AQ total scores according to misophonia severity (p=0.004). The scores of those with moderate misophonia differed from those with subclinical and mild misophonia (Table 4).

Table 3. Comparison of Misophonia Total Score with AQ Total Scores and AQ Subscales in All Participants

	Misophonia Total Score	
	r	p
AQ Total Score	0.275	0.003*
Social Skills	0.112	0.240
Attention Switching	0.266	0.005*
Attention to Detail	0.056	0.557
Communication	0.350	<0.001
Imagination	0.047	0.621

r: Spearman's rho Correlation Coefficient; AQ; Autism Spectrum Questionnaire; p<0.05 was considered statistically significant

Table 4. Comparison Of Autism Scores in Parents According To Misophonia Severity

	Misophonia Severity				p
	Subclinical	Mild	Moderate	Severe	
AQ	17.72 ± 6.51[b]	19.36 ± 4.89[b]	23 ± 2.29[a]	22 ± 3.74[ab]	0.004*
	18 (5 - 38)	19 (11 - 30)	22 (20 - 26)	22.5 (17-26)	
Social Skills	3.04 ± 2.12	3.09 ± 1.64	5 ± 2.24	3.25 ± 1.26	0.106
	3 (0 - 9)	3 (0 - 7)	5 (2 - 8)	3 (2-5)	
Attention Switching	4.09 ± 2.01	4.76 ± 1.79	5.44 ± 1.94	6.25 ± 1.89	0.046*
	4 (0 - 9)	5 (1 - 9)	5 (3 - 9)	5.5 (5 - 9)	
Attention to Detail	4.78 ± 2.34	4.49 ± 1.69	4.56 ± 2.24	5.75 ± 0.96	0.601
	5 (1 - 10)	5 (1 - 8)	4 (2 - 9)	5.5 (5 - 7)	
Communication	2.35 ± 2.01	3.33 ± 1.8	4.22 ± 1.3	4 ± 1.83	0.001*
	2 (0 - 8)[b]	3 (0 - 7)[a]	4 (2 - 6)[a]	4 (2 - 6)[ab]	
Imagination	3.44 ± 1.77	3.69 ± 1.58	3.78 ± 1.2	2.75 ± 2.36	0.572
	3 (0 - 8)	3 (1 - 8)	4 (2 - 6)	2 (1 - 6)	

p value < 0.05 was considered statistically significant. P values were calculated using one-way analysis of variance (ANOVA) for normally distributed variables and the Kruskal–Wallis test for non-normally distributed variables. [a-b]Groups sharing the same superscript letter do not differ significantly. Data are presented as mean ± standard deviation and median (minimum–maximum). AQ: Autism Spectrum Questionnaire. p<0.05 was considered statistically significant

Table 5. Investigation Of The Relationship Between Misophonia Total Score And CARS Total Score And Questions İn The Case Group

	Misophonia Total Score	
	r	p
CARS Total	0.203	0.134
CARS1 (Relating to People)	0.136	0.316
CARS2 (Imitation)	-0.017	0.899
CARS3 (Emotional Response)	0.319	0.017*
CARS4 (Body Use)	0.240	0.075
CARS5 (Object Use)	0.285	0.034
CARS6 (Adaptation to Change)	0.023	0.866
CARS7 (Visual Response)	-0.030	0.825
CARS8 (Listening Response)	0.116	0.396
CARS9 (Taste, Smell, and Touch Response and Use)	0.355	0.007*
CARS10 (Fear or Nervousness)	0.121	0.375
CARS11 (Verbal Communication)	0.022	0.874
CARS12 (Nonverbal Communication)	-0.067	0.626
CARS13 (Activity Level)	-0.013	0.927
CARS14 (Level and Consistency of Intellectual Response)	0.211	0.119
CARS15 (General Impressions)	0.214	0.113

r: Spearman's rho Correlation Coefficient; CARS: Childhood Autism Rating Scale; p<0.05 was considered statistically significant

In the case group, when the relationship between the AMISOS-R total score and the items of the CARS was examined, weak positive correlations were found between the AMISOS-R total score and items 3, 5, and 9 of the CARS (r=0.319, p=0.017; r=0.285, p=0.034; r=0.355, p=0.007, respectively). No relationship was found between the other CARS items or the CARS total score and the AMISOS-R total score (p>0.050) (Table 5).

DISCUSSION

Our findings indicate that, when the entire sample was evaluated together, there were significant differences between the groups in terms of misophonic triggers and that there was a correlation between misophonia severity and autistic traits. A notable finding of the study is that a positive correlation was identified between misophonia severity and items 3, 5, and 9 of the CARS in parents of children with ASD.

Item 9 of the CARS assesses atypical sensory processing. One of the core features of ASD is difficulties related to sensory processing, which include hyper-responsiveness, hypo-responsiveness, or paradoxical responses to various sensory stimuli such as sound, taste, smell, and touch (Osório et al. 2021). Studies indicate that sensory processing difficulties have a genetic basis and are also reported in unaffected relatives of individuals with autism (Glod et al. 2017). It has been suggested that parents with high genetic liability for ASD exhibit greater sensory processing atypicalities, which has been associated with the possibility that sensory processing problems may contribute to genetic susceptibility for ASD (Donaldson et al. 2017). Studies emphasize that ASD and misophonia share atypical sensory processing and emotion regulation difficulties, and neuroimaging findings highlight overlapping hyperactivation of the insula and amygdala (Motaghilotf 2024). A recent study has indicated that people with misophonia exhibit sensory sensitivities associated with autism (Rinaldi et al. 2023). In misophonia, sensory processing problems can manifest across a broad spectrum, ranging from hypersensitivity to specific triggers to alterations in general auditory processing patterns, attentional difficulties, and possible associations with autistic traits (Jastreboff and Jastreboff 2001, Dozier 2015, Silva and Sanchez 2019, Ertürk et al. 2024). Studies examining the relationship between misophonia and autism indicate that both conditions involve abnormal sensory processing patterns (Ertürk et al 2024). However, it is noted that sensory sensitivities observed in autism are generally more widespread and affect multiple sensory modalities, whereas in misophonia this sensitivity is more selective and typically focused on specific, repetitive auditory stimuli (Scheerer et al. 2024). Although the association we identified between item 9 of the CARS (sensory responses and adaptation) and misophonia severity in parents points to a potential overlap between sensory processing disturbances and misophonia, this finding highlights possible shared mechanisms rather than demonstrating a causal relationship. Neurophysiological assessments and sensory profile analyses to be conducted in this area may more clearly elucidate the mechanisms underlying sensory processing differences observed in misophonia and autism.

Another item that we found to be associated with misophonia severity, item 3 of the CARS, assesses the appropriateness of the child's emotional responses to environmental stimuli (Park and Kim 2016). Studies show that misophonia is associated with difficulties in emotional regulation and increased emotional reactivity (Cassiello-Robbins et al. 2020, Guetta et al. 2022). Clinical studies show that misophonia symptoms occur alongside many psychiatric disorders characterized by difficulties in regulating emotions (Jager et al. 2020, Natalini et al. 2020, Siepsiak et al. 2020). Findings from imaging studies support the hypothesis that emotion regulation is related to misophonia (San Giorgi 2015). In our study, the positive correlation we found between misophonia severity in parents and item 3 of the CARS suggests that a shared impairment in emotional regulation mechanisms may be present in both conditions and that possible common neurobiological underpinnings between misophonia and autism should be investigated.

Item 5 of the CARS assesses the child's interest in objects and whether they use them appropriately. A high score on this item indicates that the child either shows little or no interest in objects or engages with them in unusual, repetitive, and sensory-focused ways (Schopler et al. 1980). Jager et al. have demonstrated that individuals with misophonia exhibit not only auditory hypersensitivity but also general sensory hypersensitivity (Jager et al. 2020). Another study suggests that individuals with misophonia show evidence of greater hypersensitivity across multiple sensory modalities, but do not differ from controls in terms of hyposensitivity (Rinaldi et al. 2023). Temeltürk et al. found that autistic traits play a mediating role in the relationship between misophonia and sensory sensitivity (Temeltürk and Arıcı 2025). Our findings suggest that sensory processing difficulties in misophonia may share a potential common sensory sensitivity basis with the atypical object use observed in ASD.

Although the etiology of misophonia remains unclear, its association with neurodevelopmental conditions, particularly autism, has been demonstrated in numerous studies (Erfanian et al. 2019). Studies indicate that there is a significant but complex relationship between misophonia and ASD, with implications for diagnosis and treatment (Motaghilotf 2024). A study conducted with adults found a correlation between misophonia severity and autistic traits (Ertürk et al. 2024). In a large sample of adults who self-reported misophonia, 38 of 1.061 individuals (3.6%) reported having a diagnosis of autism (Claiborn et al. 2020). In a study based on parent-report assessment, misophonia was reported in 45% of 60 children diagnosed with ASD (Katikar et al. 2025). Some studies provide strong evidence that misophonia and autism spectrum disorder may share common neurobiological underpinnings. In a neuroimaging study conducted by Kumar and colleagues, participants with misophonia exhibited exaggerated responses in the anterior insular cortex, the central region of the salience network, in response to trigger sounds. The same study identified abnormal functional connectivity between the anterior insula and the ventromedial prefrontal cortex, posteromedial cortex, hippocampus, and amygdala, which was associated with sensitivity to these sounds (Kumar et al. 2017). Neuroimaging studies conducted on OSB similarly indicate structural and functional abnormalities in salience network components, particularly in the anterior insula (Ulay and Ertugrul 2009, Toyomaki and Murohashi 2013, Attanasio et al. 2024). In a study conducted by Guzick and colleagues, contrary to many previous clinical and neuroimaging findings, misophonia symptoms were reported not to be significantly associated with autistic traits. In that study, 102 children with misophonia aged 8–17 years were compared with 94 children diagnosed with anxiety disorders. The prevalence of autistic traits was higher in the anxiety disorder group. Based on these findings, the authors suggested that misophonia is more closely related to internalizing psychopathologies such as anxiety than to autism, and that the similarities observed with autism are at a phenomenological level (Guzick et al. 2023). Our study supports findings indicating an association between autism and misophonia. Although no statistically significant difference in misophonia severity was found between the groups, parents of children with autism reported higher misophonia scores, and when all participants were evaluated together, a significant association was found between autistic traits and misophonia scores. In addition, in our study, statistically significant associations were found between the total misophonia score and the attention switching and communication scores of the AQ. Another study using the AQ showed that individuals with misophonia exhibited elevated autistic traits across all five AQ subscales (Rinaldi et al. 2023). Misophonia is examined not only in terms of its general associations with psychopathologies, but also with respect to specific clinical features related to the diagnostic dimensions of psychopathology. For example, in a study that conducted a profile analysis of psychological symptoms associated with misophonia, misophonia was found to be associated with obsessive–compulsive cognitions related to excessive responsibility, perfectionism, and intolerance of uncertainty (McKay et al. 2018). Another study has indicated that misophonia has a stronger association with obsessive symptoms of OCD than with compulsive symptoms (Cusack et al. 2018). Although the association between misophonia levels and the attention switching and communication subdimensions of the AQ is a notable finding in our study, replication in larger samples is important for the generalizability of the results. The fact that misophonia is associated with multiple dimensions of psychopathology suggests that it may have a transdiagnostic nature and requires further investigation of its phenomenology.

One of the notable findings of our study also concerns the variables associated with misophonia. In the case group, it was found that thoughts about trigger sounds occupied more time during the day and that feelings of uneasiness and irritability were experienced more intensely when exposed to these sounds. In addition, significant differences were observed between the groups in terms of the types of sounds reported as misophonic triggers and the emotional responses to these triggers. Although it is known that each individual with misophonia has a unique pattern of triggers, some triggers are more commonly observed (Swedo et al. 2022). The most frequently reported misophonic trigger stimuli are chewing, eating sounds, breathing sounds, lip smacking, and crackling sounds (Andermane et al. 2023). Studies have shown that oral and nasal sounds are dominant misophonic triggers (Vitoratou et al. 2021). In their research, Jager et al. reported that 96% of patients were triggered by food-related sounds and 85% by nasal trigger sounds (Jager et al. 2020).

Consistent with the literature, in our study, eating sounds, throat sounds, and nasal sounds were identified as the most frequently reported triggers in both groups. However, a statistically significant difference was found between the groups with respect to throat sounds, and the proportion of participants reporting throat sounds as a misophonic trigger was almost twice as high in the case group as in the control group. Feelings of uneasiness in response to misophonic triggers were also reported at a higher rate in the case group. Because emotional responses to misophonic triggers are one of the core components of misophonia, emotional responses have been examined in many studies assessing misophonia (Jastreboff and Jastreboff 2014). Emotional responses observed in misophonia are typically dysphoric in nature (Claiborn et al. 2020), and anxiety, anger, irritability, and disgust are the most frequently reported emotional responses (Jastreboff and Jastreboff 2014). Although anger is the most commonly reported reaction, many negative emotional responses are frequently reported (Rouw and Erfanian 2018). The specificity of triggers and the symptoms elicited by these triggers in misophonia suggests that they are based on neurobiological mechanisms (Ferrer-Torres and Giménez-Llort 2022). The response to triggers involves an urge to escape from the sound-producing individuals or the environment, which constitutes an important dimension of misophonia that can lead to functional impairment in individuals (Claiborn et al. 2020). Our results reveal individual differences in misophonia while also contributing to the literature on the relationship between autism and misophonia. Our study indicates that misophonia symptoms may differ in parents of children with ASD and that these symptoms may be associated with autistic traits. From a clinical perspective, considering misophonia symptoms in parents when working with children diagnosed with ASD may provide indirect benefits not only for parental well-being but also for supporting the child's behavioral regulation. In addition, given the methodological difficulties in diagnosing misophonia in autism, the presence of misophonia symptoms in parents may indicate a higher likelihood of similar sensory hypersensitivity or misophonia-related symptoms in the child.

Limitations

The use of only self-report measures to assess autistic traits and misophonia levels in parents, the cross-sectional design of the study, reliance solely on parent report to determine the presence of psychopathology in other children of participants with more than one child when selecting the control group, and the lack of clinician assessment of hearing problems and other auditory conditions in participants are acknowledged as limitations of the present study. In addition, including only one parent per participant and, in cases where both parents presented, including only the parent who agreed to participate introduces the potential for selection bias in the sampling process. The recruitment of participants from a single center using convenience sampling may also limit the generalizability of the findings to the general population. In the future, conducting multicenter studies with larger and more heterogeneous samples using probability sampling methods will increase the validity of the results.

Finally, because multiple comparisons and correlation analyses were conducted in the study, it should be taken into account that the probability of Type I error may increase as a natural consequence of multiple testing.

CONCLUSION

Our study contributes to the literature on the relationship between ASD and misophonia and provides preliminary data that may guide personalized assessment and intervention strategies in this field. In particular, the positive correlations between certain items of the CARS and the severity of misophonia reported in parents suggest that misophonia in parents may be related more to sensory processing and emotional regulation mechanisms than to the overall severity of autism in the child. Our findings support approaches proposing an association between misophonia and autism and suggesting that misophonia may be considered a transdiagnostic vulnerability factor. Future research should aim to assess misophonia levels using physiological indicators and clinician-administered structured assessment tools, and to include clinical evaluation of auditory conditions in participants. In addition, studies investigating misophonia in children with autism and typically developing children and developing methods to facilitate the assessment of misophonia in ASD will contribute to the development of personalized interventions for misophonia in individuals with autism and to the implementation of therapies tailored to individual sensory profiles.

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