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Interdisciplinary Management of Misophonia in Adolescents and Young Adults: A Systematic Review

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Abstract: Misophonia is a condition defined by intense, disproportionate emotional and physiological reactivity to specific auditory triggers and remains one of the most undercharacterized sensory-based conditions affecting youth and young adults globally. This systematic review synthesises evidence from 21 studies (15 case reports, three case series, one single-case experimental design, one non-randomized controlled trial, and one randomized controlled trial) published between 2013 and 2025 to evaluate the efficacy, feasibility, and safety of interventions targeting misophonia in individuals aged 10-35 years. Four databases were searched, namely, PubMed, ScienceDirect, ResearchGate and, Google Scholar for studies published between 2010 and 2025 using a structured Boolean strategy. Study quality was appraised using Joanna Briggs Institute (JBI) tools appropriate for each design. The reviewed literature showed a gradual yet clear trend that shifts from mostly anecdotal, single-case reports towards organised, replicable intervention methods. Cognitive Behavioral Therapy (CBT), especially family-adapted variants, became the most widely used form of treatment, whereas pharmacological and audiological approaches were primarily used as supplementary rather than main treatments. The available body of evidence is still limited. This review maps the existing intervention landscape for misophonia in adolescents and young adults, identifies key developmental and methodological considerations, and highlights directions for future research.

Keywords: *misophonia, sound sensitivity, CBT, youth, systematic review, intervention, adolescents*

1. Introduction

Misophonia is not simply an aversion to noise. It is a neurobehavioral condition characterized by intense, involuntary emotional and physiological responses like anger, panic, disgust and profound distress triggered by specific, pattern-based sounds such as chewing, breathing, or pen-clicking. These are not universally unpleasant sounds but socially embedded ones and this distinction matter enormously. Since these triggers are typically caused by people nearby such as family members at the dinner table or classmates in quiet study halls, misophonia tends to create harmful social dynamics. Adolescents and young adults, already going through the intense interpersonal pressures of developmental transition, face an additional layer of threat, i.e., the very people on whom adolescents depend most become primary sources of distress.

Prevalence estimates vary widely, shaped by inconsistent diagnostic criteria and measurement tools. Still, several studies place misophonia rates among university students between 18% to 20% (Wu et al., 2014), with clinical presentations in paediatric and adolescent settings appear to be rising. The societal and developmental consequences of this trend are evident in individual behavioral patterns; for instance, people with misophonia may frequently withdraw from shared meals, avoid classrooms, and report increasing conflict with family members. These behaviours, if left unaddressed, can lead to chronic anxiety, depression, and social isolation in the long-term (Schröder et al., 2013; Jager et al., 2020).

Early descriptions of misophonia, existing before the term was coined, mostly appeared as individual case-reports, embedded in audiological or psychiatric case studies without any structured follow-up. The first decade of published treatment literature was dominated structurally by emphasizing hypothesis-generating studies: these typically involved single cases, lacked control groups, used inconsistent outcome measures, and rarely utilised any validated instrument specifically designed for misophonia that was applied uniformly across research. Interventions ranged from tinnitus retraining therapy (TRT), directly adapted from audiology to informal versions CBT, to drug trials mainly informed by comorbidity patterns rather than specific mechanisms related to misophonia.

Mattson et al. (2023) provided an important foundation for the field, documenting that misophonia affects individuals across age groups and that structured intervention produces meaningful symptomatic response in a subset of patients. Their synthesis drew predominantly on descriptive case literature, which accurately reflected the state of the evidence at the time of their search in May 2022, and was not restricted by age. Since that review, the literature has continued to grow, with the publication of the first youth-focused RCT (Lewin et al., 2025) and a quasi-experimental study with a defined control group (Seyed Mousavi et al., 2024) representing early but meaningful steps towards greater methodological rigour, alongside several new case reports extending the evidence base. The present review addresses a gap in the existing literature: the clinical and developmental experience of misophonia specifically in adolescents and young adults aged 10–35 years, a population for whom treatment evidence has not been previously synthesised.

The developmental aspect adds to this issue further. We cannot apply treatment frameworks for misophonia in youth that are based solely on adult sample, especially given the current evidence clearly shows how age influences both symptom presentation and assessment reliability.

Lewin et al. (2024) identified that in the largest treatment-seeking youth sample till date (N=47), there is a significant discrepancy between caregiver and child reports regarding symptom severity, with older children (14+ years) providing more reliable self-reports than younger children (8–13 years). This is not a minor measurement error. It shows real differences in interoceptive awareness and emotional language development., and the capacity to distinguish misophonic reactivity from general irritability or anxiety. CBT, adapted for these developmental realities, specifically addresses the catastrophic thought patterns that cause certain sounds to escalate from merely ‘annoying’ to ‘unbearable’ as the child learns to anticipate it, brace for it, and organise their social behavior around avoiding it. Breaking these thought patterns looks different in a 12-year-old than in a 24-year-old, and our intervention strategies have only recently started to account for these differences.

This review was conceived to address that developmental gap directly. Rather than replicating prior syntheses, it captures more structured studies available after that, applies design-appropriate quality appraisal tools to each study type, and synthesises what is currently known about managing misophonia in individuals aged 10–35 years across the full spectrum of available interventions. The intent is not to identify a single superior treatment modality but to map the available evidence with sufficient clarity to inform the design of future trials.

2. Methodology

2.1 Aim

To systematically review the efficacy, feasibility and safety of clinical treatments among adolescents and young adults aged 10 to 35 years combining audiological sound-based therapies with psychological/behavioral interventions on symptom severity and functional outcomes.

2.2 Research Question

The guiding research question was: "What is the current empirical evidence regarding the efficacy, feasibility, and safety of psychological, pharmacological and audiological interventions for misophonia in individuals aged 10–35 years?

2.3 Participants

Children, adolescents, and young adults aged 10 to 35 years with misophonia or significantly decreased sound tolerance characterized by intense emotional or physiological reactivity to specific trigger sounds. Studies evaluating clinical cohorts with or without psychiatric co-morbidities (e.g., anxiety, depression, OCD, neurodevelopmental conditions) were included. However, individuals with a primary diagnosis of general hyperacusis (loudness intolerance) or tinnitus were strictly excluded unless misophonia symptoms were explicitly isolated and evaluated independently. Studies including healthy, typically developing, or unaffected comparison groups were considered where available.

2.4 Review Design

This systematic review was conducted and is reported in accordance with PRISMA 2020 guidelines to ensure a structured process for identification, screening, selection and data synthesis.

2.5 Eligibility Criteria (PICO Framework)

The full eligibility criteria are presented in Table 1.

Table 1: *Eligibility Criteria for Study Inclusion and Exclusion Based on the PICO Framework*

Criteria Element	Inclusion Criteria	Exclusion Criteria
Population (P)	Participants aged 10–35 years (or samples where the mean age falls within this window).Clinical diagnosis or clinically significant presentation of misophonia confirmed via: Validated instruments (e.g., A-MISO-S, MisoQuest, DMQ)Structured clinical interviews, explicit clinician-assigned documentation, presence of psychiatric or neurodevelopmental co-morbidities (e.g., anxiety, OCD, ADHD, ASD).	Samples focusing exclusively on early childhood (under 10 years) or older adults (mean age over 35 years) with no isolated youth subgroup data. Primary diagnoses of generalized hyperacusis, tinnitus, or phonophobia without distinct misophonic trigger profiles.
Interventions (I)	Psychological: Adapted CBT; individual or family-integrated), Acceptance and Commitment Therapy (ACT), Pharmacological: Stimulants, SSRIs, antipsychotics, and adrenergic agonists, Audiological: Tinnitus Retraining Therapy (TRT), sound masking, and ear-level sound generators, multi-disciplinary or combination treatment protocols targeting misophonia symptoms.	Unstructured, non-clinical, or self-help strategies without professional oversight, Interventions targeting general noise sensitivity that do not explicitly address misophonic reactivity.
Comparators (C)	Active parallel comparisons (RCT or non-RCT designs), intra-individual baselines (e.g., A-B or A-B-A single-subject designs with quantified pre-post assessments), and uncontrolled descriptive case reports	Studies lacking any quantifiable baseline, pre-post measurement, or structural follow-up metrics.
Outcomes (O)	Primary: Misophonia-specific symptom severity (validated or study-defined scales), comorbid anxiety, and functional impairment (social functioning/isolation). Secondary: Feasibility indices (session completion, attrition/dropout rates, compliance), caregiver- vs. self-report discrepancies, and intervention-specific adverse events.	Studies evaluating purely qualitative feedback without standardized behavioral, clinical, or psychometric data tracking.

2.6 Search Strategy

Four databases were searched: PubMed (MEDLINE), ScienceDirect, ResearchGate and Google Scholar. The search covered studies published from 2010 to 2025. One included study (Lewin et al., 2025) was accessed as an advance online publication prior to its formal print issue date. The following structured Boolean search string was applied uniformly across all 4 databases, with minor platform-specific syntactic adaptations: (misophonia OR "selective sound sensitivity") AND (adolescent* OR "young adult*" OR student* OR youth) AND (intervention* OR treatment* OR therapy OR management) For studies meeting all eligibility criteria where the full text was unretrievable despite multiple database searches, data extraction was completed utilizing the comprehensive abstract metadata.

2.7 Screening and Data Extraction

The selection of studies was carried out following the PRISMA 2020 guidelines. All records retrieved from the databases were screened in the following stages. First, all duplicate records were removed, followed by titles and abstracts screening for relevance based on the eligibility criteria. Full-text articles of potentially relevant studies were then assessed in detail. Studies that met the inclusion criteria were included in the final review. Reasons for the exclusion of full-text articles at this final stage were explicitly documented. Studies meeting all primary eligibility parameters were approved for definitive inclusion in the review and progressed to data extraction and quality appraisal.

2.8 Data Extraction and Synthesis

Relevant information from selected studies was extracted and organized systematically. Information was extracted in the following tabular format capturing Study ID & Design, Demographics & Clinical Baseline Profile, Intervention, Comparison, Outcome and Primary Findings.

2.9 Quality Appraisal

Critical appraisal of the 21 included studies using Joanna Briggs Institute (JBI) tools revealed a strong overall evidence base. The 15 case reports exhibited high quality: four scored a perfect 8/8 due to explicit safety or adverse event tracking (Alekri and Al Saif, 2019; Karalis et al., 2022; Osuagwu et al., 2020; Zarotti et al., 2022), eleven scored 7/8, and one scored 6/8 (Muller et al., 2018), with deductions almost universally driven by omitted safety reporting (Q7). Appraisal of the three case-series showed strong quality (77% criteria met), Storch et al. (2015; 8/9), Banyra et al. (2022; 8/9), and Johnson et al. (2013; 7/9); all provided rigorous diagnostic and baseline profiles but introduced an unclear risk of selection bias by omitting whether enrollment was consecutive (Q4). Roushani and Mehrabizadeh Honarmand (2021), who used a non-concurrent multiple baseline single-case experimental design scored 7/9. The single randomized controlled trial (Lewin et al., 2025) yielded a moderate score of 7/13, demonstrating robust randomization (Q1) and baseline group equivalence (Q3) alongside prominent reporting gaps in allocation concealment (Q2), blinding (Q4, Q5, Q7), and attrition tracking (Q10). Conversely, the single quasi-experimental trial (Seyed Mousavi et al., 2024) demonstrated exceptional quality, scoring a perfect 9/9 by establishing clear temporal causality (Q1), utilizing a homogenous parallel control (Q2, Q3), maintaining symmetric psychometric tracking (Q5, Q6, Q7), and verifying 100% participant retention (N = 30) with zero attrition (Q8).

3. Results

The study selection process was conducted according to the PRISMA 2020 guidelines. Studies were identified from different electronic databases and screened based on the predefined inclusion and exclusion criteria. Duplicate studies were removed, followed by title and abstract screening. Lastly, full-length texts were assessed.

Each of the 21 studies was first categorized by primary intervention modality: (1) cognitive-behavioral and related psychological therapies, encompassing standard CBT, CBT with Exposure and Response Prevention (CBT-ERP), Dialectical Behavior Therapy (DBT), Acceptance and Commitment Therapy (ACT), Metacognitive Interpersonal Therapy (MIT), and trans-diagnostic protocols; (2) pharmacological management including stimulants, selective serotonin reuptake inhibitors (SSRIs), antipsychotics, and adrenergic agents; and (3) multimodal combinations, cases in which pharmacotherapy was integrated with structured psychotherapy within a single documented clinical course. Within each modality category, studies were further coded for: delivery format (individual vs. group), session frequency and duration, primary outcome instruments, direction and magnitude of reported change, presence of a comparison condition, and follow-up availability. This structured process confirmed that no study in the included set evaluated audiological management (e.g., tinnitus retraining therapy, ear-level sound generators) as a primary standalone intervention for misophonia in the 10–35 age range, an absence that itself constitutes a meaningful finding regarding gaps in the existing evidence base.

As the included studies were heterogeneous across design, sample size, outcome instruments, and intervention specification, a formal meta-analysis was not feasible. The present synthesis is organised thematically by intervention category where multiple studies reported change on the same instrument particularly the A-MISO-S (used across nine studies) and the MQ (used across six studies). We describe the direction, magnitude, and clinical threshold of reported changes using instrument-based severity classifications. Other studies utilised instruments like the SUDS, MAQ, NAS, S-Five, MTS, and SIQ.

The complete study selection process is presented in Figure 1.

3.1 PRISMA 2020 Flow Chart

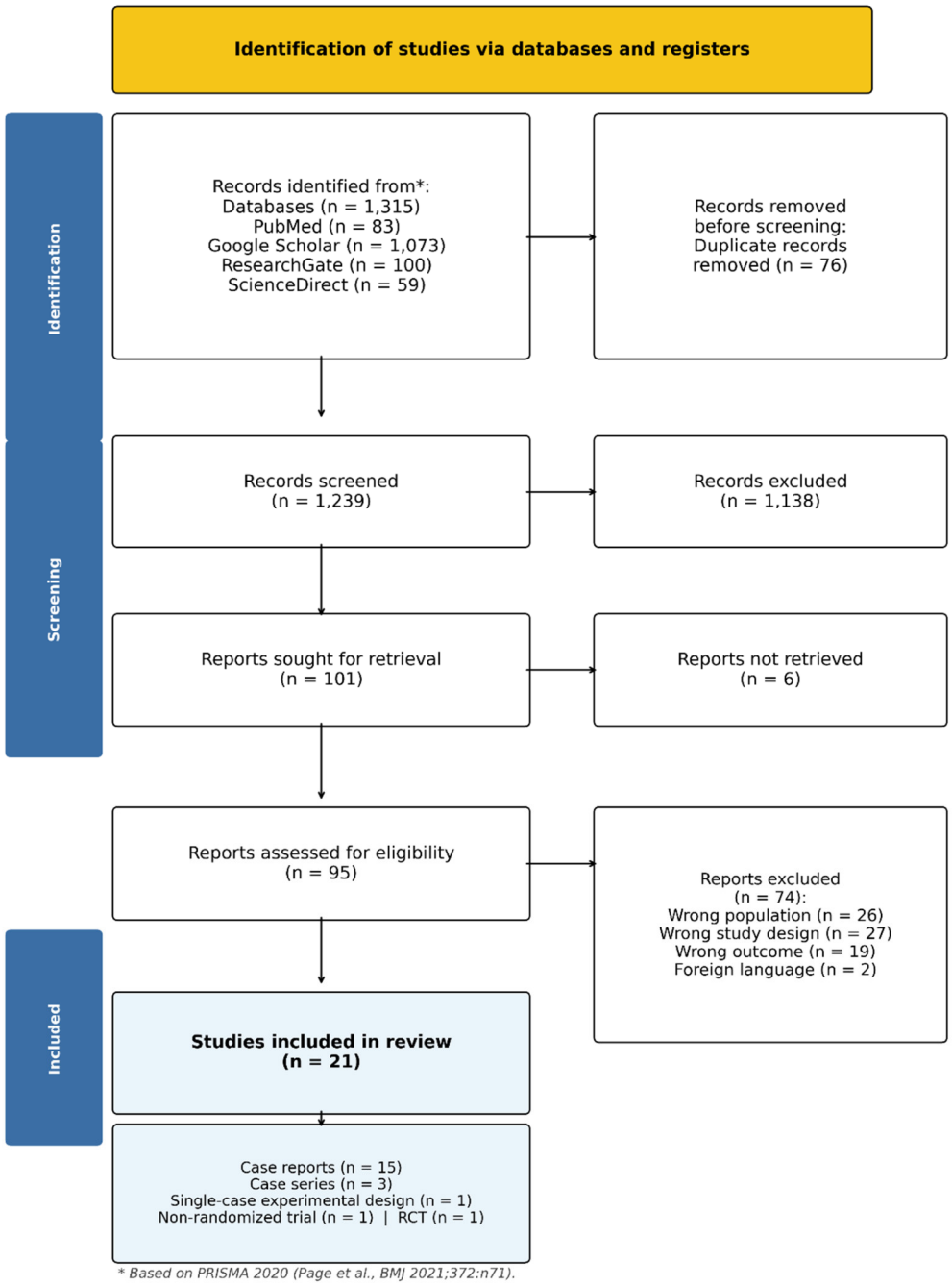

Fig 1: PRISMA 2020 flow diagram illustrating the study selection process. Records were identified from four electronic databases (PubMed, Google Scholar, ResearchGate, and ScienceDirect), screened for eligibility, and assessed for inclusion. A total of 21 studies met the inclusion criteria and were included in the final synthesis. Based on: Page MJ, et al. BMJ 2021;372:n71.

The electronic database search retrieved 1,315 records in total: PubMed (n = 83), Google Scholar (n = 1,073), ResearchGate (n = 100), and ScienceDirect (n = 59). Following deduplication (n = 76 removed), 1,239 records proceeded for title and abstract screening. Out of these, 1,138 were excluded at screening principally for addressing adult-only populations without a youth subgroup, solely narrative commentary or editorials lacking original clinical data, or for examining auditory conditions other than misophonia. One hundred and one reports were then sought for full-text retrieval of which six were unretrievable across all

databases. Finally, 95 reports were assessed against the full PICO eligibility framework. A further 74 were excluded: wrong population ($n = 26$), wrong study design ($n = 27$), wrong outcome ($n = 19$), foreign language ($n = 2$). Twenty-one studies met all inclusion criteria and were included in the final synthesis.

3.2 Characteristics of Included Studies

The 21 included studies, spanning publication years 2013 through 2025, collectively enrolled participants ranging in age from 11 to 35 years, with most clinical presentations concentrated between 14 and 25 years, a developmental band broadly spanning late adolescence through emerging adulthood. Sample sizes were uniformly small: 15 studies were single-case reports ($N = 1$ each), three were case series ($N = 2–5$), one was a single-case experimental design (N = 3), one was a non-randomized controlled trial ($N = 30$; Seyed Mousavi et al., 2024), and one was a two-site RCT ($N = 43$; Lewin et al., 2025). Females constituted the majority of enrolled participants across nearly all studies, a pattern consistent with broader misophonia epidemiological observations (Jager et al., 2020), though no study systematically investigated gender as a moderating variable. Geographically, studies originated from the United States (eight studies), the United Kingdom (three), Iran (two), Turkey (two), Saudi Arabia (one), Ukraine (one), India (one), Italy (one), the Netherlands (one), and Australia (one), indicating a genuinely global, if still clinically sparse evidence base. Clinical settings were varied: outpatient psychiatric and psychological services predominated, though partial hospitalization (Kamody et al., 2017), university setting (Roushani and Mehrabizadeh Honarmand, 2021), telehealth delivery (Petersen and Twohig, 2022; Lewin et al., 2025), and specialist tinnitus centers (Natalini et al., 2024) all featured. Comorbidity was common. Anxiety disorders, depressive symptoms, OCD-spectrum features, and ADHD were each documented across multiple studies, confirming that misophonia in youth and young adults rarely presents in clinical isolation.

The full characteristics and findings of all included studies are presented in Table 2.

Table 2: Characteristics, Interventions, and Primary Findings of the 21 Included Studies

Study ID & Design	Demographics & Clinical Baseline Profile	Intervention	Comparison	Outcome	Primary Findings
Bernstein et al. (2013) Case Report	N = 1; 19-year-old female college student. Triggers: chewing, swallowing, slurping. Baseline: GAF = 70, BAI = 1, BDI = 4, BHS = 3. Mild-to-moderate functional impairment.	Psychologist-delivered CBT (6 sessions) targeting cognitive, behavioral, and physiological components.	None	GAF, self-reported distress, anxiety, depression, hopelessness	Post-treatment (PT): GAF improved from 70 → 85, indicating high functioning and near-absent symptoms. Gains maintained at 4-month follow-up.
Muller et al. (2018) Case Report	N = 1; 14-year-old female adolescent. Severe distress and avoidance to home/school trigger sounds. No standardized baseline score reported.	Individual CBT + ERP + assertiveness training + parent sessions. Weekly/biweekly over 1 year with intermittent booster sessions across 3 years.	None	SUDS hierarchy (30–90), sound tolerance, avoidance indices	Reliable intra-session habituation achieved within 10–25 minutes during ERP. Avoidance significantly reduced and trigger tolerance improved.

Reid (2016) Case Report	N = 1; 14-year-old female adolescent with severe misophonia. Comorbid OCD, MDD, specific phobia, ADHD. Medications: fluoxetine, clonazepam, aripiprazole.	Intensive outpatient/partial hospitalization CBT-ERP: 14 sessions across 3 weeks. Included imaginal and in vivo exposure plus daily homework.	None	Clinician-rated semi-structured interview symptom scales	Misophonia symptoms reduced by 59% after two trigger-focused sessions (severe → mild). Additional 18% reduction at 3-month follow-up reaching subclinical range.
Storch et al. (2015) Case Series	N = 2 female youth (17 and 11 years). No psychiatric comorbidity. Case 1 already on venlafaxine and lisdexamfetamine. Case 2 showed marked distress and family impairment.	Family-based CBT involving psychoeducation, hierarchy construction, gradual exposure, response prevention, cognitive restructuring, and parent accommodation reduction. Case 1: 6 acute + 4 follow-up sessions; Case 2: 13 acute + 5 follow-up sessions.	None	Misophonia Questionnaire (MQ) self/parent versions; clinical severity anchors	Case 1: Self-MQ 55 → 37; severity 12 → 7; returned to public school. Case 2: Self-MQ 31 → 25, parent-MQ 43 → 26; parent accommodation markedly reduced.
Lewin et al. (2025) Randomized Controlled Trial	N = 43 youth with clinically significant misophonia. Two-site trial. No baseline group differences reported.	Unified Protocol for Transdiagnostic Treatment of Emotional Disorders in Children/Adolescents (UP-C/A); 10 telehealth sessions.	Psychoeducation and Relaxation Training (PRT)	Misophonia symptom ratings, global functioning indices assessed at 5 and 10 weeks	Overall response rate = 47%. UP-C/A: 54% response vs. PRT: 25%. UP-C/A demonstrated superior outcomes with moderate treatment effects.
Kamody et al. (2017) Case Report	N = 1; 16-year-old female with extreme misophonia, rage, and social isolation.	Partial hospitalization DBT program for 7 weeks (5 days/week) involving	None	A-MISO-S, MAQ, SCL-90-R	A-MISO-S reduced from extreme to moderate range; MAQ shifted from

	Comorbid social anxiety. Failed prior outpatient CBT. Medication: paroxetine 25 mg.	individual DBT, mindfulness, distress tolerance, and medication management.			severe to mild; SCL-90-R global symptoms normalized.
Petersen and Twohig (2022) Case Report	N = 1; 12-year-old female with moderately severe misophonia and depressive symptoms. Treated online during COVID-19.	Online ACT; 16 sessions (50 minutes each) emphasizing psychological flexibility and acceptance.	None	A-MISO-S, RCADS-D, RCADS-A, AFQ-Y8	A-MISO-S reduced from 10 → 5 (50% reduction). RCADS-D decreased from 66 → 60. Anxiety and psychological flexibility scores remained stable within normative limits.
Spencer et al. (2024) Case Report	N = 1; female emerging adult in early 20s with misophonia and secondary anxiety/depression.	Individual ACT delivered across 12 sessions.	None	Psychological flexibility measures, misophonia severity, anxiety/depression scales	Psychological flexibility improved with concurrent reductions in anxiety and depression at 2-month follow-up.
Osuagwu et al. (2020) Case Report	N = 1; 14-year-old male with inattention, distractibility, and distress toward mother's voice and chewing sounds. No anxiety/OCD history.	Methylphenidate pharmacotherapy combined with coping-focused CBT.	None	Clinical monitoring of attention, concentration, and distractibility	Improved concentration and reduced misophonia-related distractibility. Symptoms re-emerged when medication doses were missed.
Gregory and Foster (2023) Case Report	N = 1; 24-year-old female with childhood-onset triggers including eating, breathing, and muffled sounds. No psychiatric comorbidity.	Intensive formulation-based CBT by two psychologists using imagery rescripting (ImRs), behavioral experiments, and	None	S-Five total and subscale scores; S-Five-T	S-Five total reduced dramatically from 101 → 17. Reliable Change Index (RCI = 4.29) indicated statistically

		stimulus discrimination. Total: 12 hours over 5 sessions within 6 weeks.			reliable and clinically significant improvement.
Seyed Mousavi et al. (2024) Non-Randomized Controlled Trial	N = 30 female adolescents (12–18 years) from Ardabil, Iran. MQ ≥ 7.	Group CBT emphasizing emotion regulation, counter-conditioning, and relaxation training. Eight 60-minute sessions over 4 weeks.	Waitlist control	MQ, Social Isolation Questionnaire (SIQ), Anxiety Sensitivity Index (ASI)	Significant reductions in ASI and SIQ ($p < .001$). ASI gains maintained at follow-up. SIQ improved from 62.40 → 48.20 → 47.00 with no significant post-treatment to follow-up change.
Natalini et al. (2024) Case Report	N = 1; 25-year-old male with normal hearing. Comorbid OCPD and AvPD with narcissistic traits. Baseline: A-MISO-S = 16, BDI-II = 12, STAI-State = 46, STAI-Trait = 49.	Long-term Metacognitive Interpersonal Therapy (MIT) at tinnitus center. Weekly then online/fortnightly over 2 years.	None	A-MISO-S, SCID-II, BDI-II, STAI-Y	A-MISO-S reduced 16 → 8; BDI-II 12 → 3; STAI-State 46 → 34; STAI-Trait 49 → 35. Social functioning and trigger tolerance improved.
Banyra et al. (2022) Case Series	N = 5 young adults (22–31 years; 60% female) with chronic inflammatory urological disease and misophonia. Baseline A-MISO-S: 13–18. Comorbid ROCD, MDD, OCD, anxiety.	Multidisciplinary intervention involving urological management, psychiatric monitoring, and CBT with trigger hierarchies. 14–16 sessions over 15–19 weeks.	None	A-MISO-S, urological status, qualitative relationship/avoidance outcomes	Mean A-MISO-S recovery rate = 37.7% (post-treatment scores 8–11). Complete resolution of urological symptoms observed; relationship difficulties persisted.
Zarotti et al. (2022) Case Report	N = 1; 16-year-old female with severe misophonia and emotion dysregulation.	Online emotion regulation-focused CBT including psychoeducation, mindfulness,	None	A-MISO-S, DERS, HADS-A, HADS-D	A-MISO-S improved 17 → 11 → 10 at follow-up. DERS reduced 134

	Baseline: A-MISO-S = 17, DERS = 134, HADS-A = 10, HADS-D = 8.	progressive muscle relaxation, and distress tolerance across 15 weekly sessions.			→ 80. HADS-A reduced 10 → 5 and HADS-D 8 → 3, falling below clinical cut-offs.
Roushani and Mehrabizadeh Honarmand (2021) Single-Case Experimental Design	N = 3 female university students (20–22 years). Baseline NAS scores: 73.0, 65.25, 48.4. No psychopharmacology or prior psychotherapy.	CBT delivered by psychologist including relaxation, task concentration, audio manipulation, and exposure. Eight weekly 60-minute sessions.	Multiple baseline pre-post design	Novaco Anger Scale (NAS), MQ, recovery percentages	Post-treatment anger significantly reduced. Recovery percentages: 43.82%, 42.28%, and 9.09%, demonstrating marked heterogeneity. Overall follow-up recovery = 44.34%.
Lamba and Bajaj (2023) Case Report	N = 1; 22-year-old female with childhood-onset chewing and burping triggers. Baseline: MAQ = 50, HAM-A = 18, VAS = 10.	Transdiagnostic CBT involving distress tolerance, exposure habituation, and cognitive restructuring. Twenty-five twice-weekly sessions (45 minutes each).	None	MAQ, HAM-A, VAS	MAQ reduced 50 → 10; HAM-A 18 → 5; VAS 10 → 3. Social and daily functioning fully restored.
Karalis et al. (2022) Case Report	N = 1; 15-year-old female with mood/anxiety disorders. Baseline: PHQ-9 = 16, ACE score = 4, suicidal ideation present.	Fluoxetine + CBT with sequential augmentation using propranolol, topiramate, and lurasidone.	None	PHQ-9 and psychiatric clinical observations	Fluoxetine improved mood/anxiety with only minor misophonia benefit. Additional pharmacological agents failed to reduce sound sensitivity.
Alekri and Al Saif (2019) Case Report	N = 1; 18-year-old female with severe depression, bulimia nervosa, and suicide	Combined pharmacotherapy (escitalopram later switched to fluoxetine) + 20 psychotherapy	None	A-MISO-S with 12-month follow-up	A-MISO-S improved from 23 → 12 (47.8% reduction). Significant

	attempts. Baseline A-MISO-S = 23.	sessions focused on coping strategies across 1 year.			depressive symptom remission also observed, though treatment effects were confounded.
Cecilione et al. (2021) Case Report	N = 1; adolescent female with severe chewing/slurping-triggered impairment at home and school.	Behavioral CBT with direct exposure following comprehensive clinical assessment.	None	Clinical interview-based symptom assessment	Reduction in avoidance and successful clinical outcome reported. Quantitative data unavailable.
Johnson et al. (2013) Case Series	N = 3 paediatric/adolescent cases. Case 1: 17-year-old female with anxiety/verbal aggression. Case 2: 16-year-old male with severe anger and avoidance. Case 3: 11-year-old female with tantrums and avoidance.	Observational monitoring of pharmacotherapy: Case 1—venlafaxine + lisdexamfetamine; Case 2—escitalopram; Case 3—no medication.	None	Descriptive symptom and medication response tracking	Case 1 showed modest improvement but persistent impairment. Case 2 responded positively to escitalopram with improved family functioning. Case 3 remained untreated with ongoing escalation of symptoms.
Avanoğlu and Kılıç (2024) Case Report	N = 1; 28-year-old female outpatient. Baseline Misophonia Total Score (MTS) = 54. No psychiatric history.	Brief psychiatrist-delivered CBT involving psychoeducation, cognitive restructuring, and exposure. Eight 30-minute sessions.	None	Misophonia Total Score (MTS)	MTS reduced from 54 → 35, indicating reduction from severe to moderate symptom severity.

Note. CBT = Cognitive-Behavioral Therapy; ERP = Exposure and Response Prevention; ACT = Acceptance and Commitment Therapy; DBT = Dialectical Behavior Therapy; MIT = Metacognitive Interpersonal Therapy; PMR = Progressive Muscle Relaxation; ImRs = Imagery Rescripting; A-MISO-S = Amsterdam Misophonia Scale; MQ = Misophonia Questionnaire; MAQ = Misophonia Assessment Questionnaire; MTS = Misophonia Total Score; GAF = Global Assessment of Functioning; SUDS = Subjective Units of Distress Scale.

3.3 Comprehensive Synthesis of Major Findings

3.3.1 Theme 1: Cognitive-Behavioral and Related Psychological Therapies

This represents the largest and clinically informative category in the review. Thirteen of the 21 included studies evaluated some variant of CBT or a CBT-adjacent psychological protocol. The pattern is not ambiguous: across formats, delivery modes, and age subgroups, structured psychological intervention reliably reduces misophonia symptom severity. What varies is the magnitude of that reduction and the durability of gains at follow-up.

There is a consistent set of core components: psychoeducation, the development of trigger hierarchies, graduated exposure combined with response prevention, cognitive restructuring of catastrophic thoughts, and some form of family accommodation reduction. These components appeared across virtually every CBT-based case, regardless of whether it was labelled as the "standard CBT," "CBT-ERP," "trans-diagnostic CBT," or a "formulation-driven" approach.

Standard CBT. Bernstein et al. (2013) reported one of the earliest structured CBT cases in this population. A 19-year-old college student receiving six sessions of psychologist-delivered CBT targeting chewing, swallowing, and slurping sounds achieved a GAF improvement from 70 to 85, representing a shift from mild impairment to near-full functioning. Critically, these gains were maintained at four-month follow-up, a duration that exceeds the follow-up window documented in many subsequent case reports. Avanoğlu and Kılıç (2024) treated a 28-year-old woman across eight brief sessions combining psychoeducation, cognitive restructuring, and exposure, documenting a reduction in the Misophonia Total Score from 54 to 35, a meaningful severity reduction, though the instrument's clinical threshold anchors are less well-validated than the A-MISO-S. Cecilione et al. (2021) reported successful CBT with exposures in an adolescent girl but provided no quantitative outcome data, limiting the inferential weight of that report.

CBT with Exposure and Response Prevention (CBT-ERP). Two adolescent cases treated with CBT-ERP by Muller et al. (2018) and Reid (2016) provide particularly informative findings. Muller et al. documented a 14-year-old female treated over one year, an exceptionally long treatment course for this literature with weekly and biweekly sessions combining individual CBT, ERP, and assertiveness training alongside parent collateral meetings. Habituation occurred reliably within 10–25 minutes during ERP sessions using a SUDS hierarchy spanning 30–90, and misophonic avoidance declined substantially over the course of treatment. The developmental context of this case is important: the duration required, parental involvement, and incorporation of assertiveness elements all highlight factors that are particularly relevant in adolescent treatment settings. Reid (2016) reported a more intensive format of 14 sessions over three weeks in a partial hospitalization setting, treating a 14-year-old with severe misophonia alongside OCD, major depression, and specific phobia. Misophonic symptoms reduced by 59% after just two sessions directly targeting misophonic stimuli, shifting from severe to mild, with a further 18% reduction at three-month follow-up reaching subclinical severity. The rapidity of that response is striking and needs attention. It suggests that for at least some presentations, particularly those with clear OCD-spectrum comorbidity, intensive ERP protocols may work faster than the gradual weekly format.

Acceptance and Commitment Therapy (ACT). Two case reports evaluated ACT: Petersen and Twohig (2022) and Spencer et al. (2024). Petersen and Twohig treated a 12-year-old female online during the COVID-19 pandemic across 16 sessions, documenting a 50% reduction in A-MISO-S score (10 to 5) and a meaningful decline in depressive symptoms, with anxiety symptoms remaining stable. Spencer et al. treated an adult woman in her early 20s across 12 individual sessions, reporting improvement in psychological flexibility and reduction in secondary depression and anxiety at two-month follow-up. Both cases are limited by single-subject methodology, but they introduce an important conceptual distinction. ACT does not primarily target the sound triggers themselves, it targets the psychological rigidity and avoidance behavior that amplifies misophonia's functional impact. Whether that approach produces gains comparable to direct ERP-based habituation remains unanswered; the instruments used across these two ACT cases (A-MISO-S, psychological flexibility measures) differed from those used in CBT-ERP cases (SUDS, MQ), preventing direct comparison.

Emotion Regulation and DBT. Kamody et al. (2017) documented a clinically important case: a 16-year-old with extreme misophonia and comorbid social anxiety who had failed prior outpatient CBT. Treated in a partial hospitalization DBT milieu (seven weeks, five days per week, with concurrent paroxetine management), she achieved a reduction from extreme to moderate on the Amsterdam Misophonia Scale and from severe to mild on the Misophonia Assessment Questionnaire, with global psychological symptoms in

the normative range on the SCL-90-R. The patient had failed outpatient CBT before achieving response in a DBT-based intensive setting raises questions about whether treatment resistance in misophonia may track emotion dysregulation severity specifically, a question reinforced by Zarotti et al. (2022), who treated a 16-year-old online across 15 sessions of CBT explicitly targeting emotion regulation. Here, the A-MISO-S score moved from 17 (severe) to 11 at post treatment and 10 (moderate) at one-month follow-up, and the total DERS score showed clinically reliable change (134 to 80), with anxiety and depression falling below clinical cutoffs.

Metacognitive and Interpersonal Approaches. Natalini et al. (2024) reported the longest treatment course in the included set: a 25-year-old man with misophonia and comorbid personality disorders (obsessive-compulsive and avoidant) receiving two years of Metacognitive Interpersonal Therapy (MIT) at a specialist tinnitus centre. The A-MISO-S declined from 16 (severe) to 8 (mild), and BDI-II scores reduced from 12 to 3, with STAI state and trait scores declining substantially. This case is notable because the patient's personality comorbidity and long treatment duration point to a subpopulation; young adults with misophonia accompanied by characterological difficulty may require entirely different treatment approaches than those appropriate for misophonia alone, without personality-related comorbidities.

Intensive and Trans-Diagnostic Formats. Gregory and Foster (2023) treated a 24-year-old woman across five sessions totalling 12 hours, a highly condensed, intensive formulation-driven CBT protocol incorporating imagery rescripting (ImRs), behavioral experiments, and stimulus discrimination training. The SFive total score reduced from 101 to 17 (RCI = 4.29), representing a statistically reliable and clinically significant change by individual-level psychometric standards. The rapid and substantial magnitude of this reduction in an intensive brief-format protocol is among the most striking effect reports in the case-level literature. Lamba and Bajaj (2023) documented a trans-diagnostic CBT approach across 25 twice-weekly sessions in a 22-year-old woman; the MAQ declined from 50 to 10, the HAM-A from 18 to 5, and the VAS from 10 to 3. The magnitude of these reductions representing recovery to near-absent symptom levels is consistent with what other CBT variants have produced, but the session volume required was considerably higher than most other included protocols.

Group CBT and the Non-Randomized Controlled Trial. The methodological standout in the psychological therapy category, indeed, in the entire case report and case series literature is Seyed Mousavi et al. (2024). This non-randomized controlled trial enrolled 30 female adolescents aged 12–18 in Ardabil City, Iran, screened via the Misophonia Questionnaire (MQ ≥ 7) and allocated to either eight sessions of group CBT (60 minutes each, delivered over four weeks) or a waitlist control. The CBT protocol integrated emotional regulation, counter-conditioning, and relaxation training. Group CBT significantly reduced anxiety sensitivity (ASI) and social isolation (SIQ) at post-treatment ($p < .001$), with anxiety sensitivity reductions sustained at follow-up; notably, SIQ scores continued to decline from post-treatment (48.20) to follow-up (47.00), with Bonferroni analysis confirming that gains relative to baseline remained statistically significant at follow-up ($p = .001$), suggesting that social isolation improvements were also maintained. This is the highest-quality controlled evidence in the psychological therapy category, and its 0% attrition establishes it as the most methodologically rigorous study in the synthesis below the RCT level. The finding that anxiety sensitivity reductions were durable while social isolation benefits showed a similar pattern of durability at follow-up.

Roushani and Mehrabizadeh Honarmand (2021) used a multiple baseline single-case experimental design with three female university students aged 20–22, delivering eight 60-minute sessions of CBT targeting relaxation, task concentration, audio manipulation, and exposure. Novaco Anger Scale (NAS) scores declined for all three participants after intervention; recovery percentages were 43.82%, 42.28%, and 9.09%, respectively. The variability between participants particularly the poor response of the third participant offers a remarkably transparent perspective on the diverse outcomes of CBT for misophonia, rarely visible in single-case reports that typically highlight only successful treatment results.

The Randomized Controlled Trial. Lewin et al. (2025) represents the highest level of evidence currently available. This two-site randomized controlled trial included 43 young people with clinically significant misophonia, assigning them randomly to either 10 sessions of the Unified Protocol for Transdiagnostic Treatment of Emotional Disorders in Children and Adolescents (UP-C/A), delivered through telehealth, or to a comparison group receiving Psychoeducation and Relaxation Training (PRT). The overall response to treatment was 47%. The UP-C/A showed a 54% response rate compared to 25% in PRT a clinically significant difference, even if not all outcome measures clearly separated the two groups. This finding is significant for two reasons. First, it offers the first randomized evidence that a structured transdiagnostic

CBT protocol performs better than an active comparison in youth misophonia. Second, using an active comparator instead of a waitlist raises the evidentiary standard: PRT is a structured intervention, not a passive control, and UP-C/A still performed better than it. The effect exists, though it is only moderate.

3.3.2 Theme 2: Pharmacological Management

Pharmacological approaches appeared across four included studies, predominantly in combination with psychological intervention. Pure pharmacotherapy without a structured psychological component was not documented in any included study, a finding that aligns with wider field's current uncertainty regarding whether misophonia has a pharmacological basis that can be directly addressed. Johnson et al. (2013) profiled three adolescents (aged 11–17 years) receiving ongoing pharmacotherapy at clinical presentation: one on venlafaxine (150 mg) and lisdexamfetamine (70 mg), another on escitalopram (10 mg), and one untreated. The adolescent on escitalopram showed a positive response, increased ease at home and more family time while the adolescent on the stimulant–SNRI combination remained significantly impaired despite medication. The untreated 11-year-old showed severe, unremitting distress. These contrasting pathways highlight the heterogeneity of pharmacological response in this age group, though the absence of standardized pre-post outcome measures limits quantification.

Karalis et al. (2022) documented a 15-year-old whose initial response to fluoxetine showed modest improvement in mood and anxiety, with limited misophonia-specific benefit was followed by sequential pharmacological augmentations with propranolol, topiramate, and lurasidone, none of which produced meaningful sound sensitivity reduction. Alekri and Al Saif (2019) documented a combined SSRI (escitalopram, then fluoxetine) and psychotherapy approach in an 18-year-old with comorbid severe depression and bulimia nervosa; the A-MISO-S declined from 23 (extreme) to 12 (moderate) at 12 months, representing a 47.8% reduction, though isolating the pharmacological contribution from the coping-focused psychotherapy is not possible in this single-case design. Osuagwu et al. (2020) treated a 14-year-old male whose inattention and misophonic distractibility improved markedly on methylphenidate, with symptom re-emergence when medication was missed, suggesting that in cases where ADHD-spectrum inattention drives amplified reactivity to auditory triggers, stimulant medication may address a shared attentional mechanism.

Overall, the pharmacological literature in this review does not support any single agent as a first-line misophonia-specific treatment. SSRIs appear clinically useful for comorbid anxiety and depression, which are common, but their direct effect on trigger reactivity is inconsistent. Stimulants may hold specific utility in cases where heightened attention to triggers is the immediate underlying mechanism.

3.3.3 Theme 3: Multimodal and Combination Approaches

Several studies documented clinical courses that integrated pharmacological management within structured psychotherapy. Storch et al. (2015) described two female youth (ages 17 and 11) receiving CBT including psychoeducation, trigger hierarchy construction, graduated exposures, response prevention, cognitive restructuring and family accommodation reduction with one case already receiving venlafaxine and lisdexamfetamine. MQ scores declined substantially in both cases: the 17-year-old's self-reported MQ dropped from 55 to 37 and severity from 12 to 7; the 11-year-old's self-reported MQ declined from 31 to 25, with caregiver-reported MQ declining from 43 to 26. These are meaningful reductions that reflect genuine clinical response. The family accommodation component is worth flagging specifically: by directly targeting parental behaviors that enable misophonic avoidance, the protocol addressed a maintenance factor that purely individual-only treatments cannot reach.

Banyra et al. (2022) reported a case series of five young adults aged 22–31 years presenting to a urological service with chronic inflammatory urological disease alongside misophonia, a notable multimorbidity combination. Psychiatric care and CBT (14–16 sessions over 15–19 weeks) were integrated; the overall A-MISO-S recovery rate across the five cases was 37.7%, with end scores ranging from 8 to 11. All five experienced relief from urological symptoms, raising the hypothesis not testable in this single series that misophonia-related distress may directly modulate somatic inflammatory pathology via shared autonomic dysregulation pathways.

3.4 Effect Measures and Clinical Thresholds

Before breaking down the findings by intervention type, a brief discussion of the measurement architecture is necessary since the diversity of instruments employed across these 21 studies goes beyond mere methodological inconvenience. It reflects the genuine absence of consensus on how misophonia severity should be operationalized. The Amsterdam Misophonia Scale (A-MISO-S; scored 0–24) uses established severity anchors: 0–4 (subclinical), 5–9 (mild), 10–14 (moderate), 15–19 (severe), and 20–24 (extreme).

Score reductions crossing one full severity band were treated throughout this synthesis as clinically meaningful change. The Misophonia Questionnaire (MQ), used in several youth-focused studies (Storch et al., 2015; Roushani and Mehrabizadeh Honarmand, 2021), yields a composite score reflecting symptom frequency, distress, and impairment; raw score reductions exceeding 10 points were provisionally treated as clinically meaningful given the scale's range. The Global Assessment of Functioning (GAF; 0–100) was applied in Bernstein et al. (2013); an increase from 70 to 85 represents a shift from mild-to-moderate impairment into the high-functioning range. The SFive (Misophonia Response Scale, scored 0–180; Gregory and Foster, 2023) used Reliable Change Index (RCI) calculations to establish statistical significance of observed change at the individual level. The Misophonia Total Score (MTS; Avanoğlu and Kılıç, 2024) and the Misophonia Assessment Questionnaire (MAQ; Lamba and Bajaj, 2023; Alekri and Al Saif, 2019) were also used in single-case contexts. No study in the included set reported standardized effect sizes (Cohen's *d* or η^2) derived from group-level inferential statistics except for the RCT (Lewin et al., 2025) and the non-RCT (Seyed Mousavi et al., 2024), where group-level *p*-values and proportional response rates were available. Raw score reductions and recovery percentages constitute the primary effect metrics throughout the case-level literature.

3.5 Certainty Assessment

The certainty of evidence for each included study was assessed using JBI Critical Appraisal Checklists matched to design type. Confidence in the body of evidence was characterized as low to very low overall, owing primarily to the structural dominance of single-case reports without comparison conditions. Case reports, however, meticulously documented, cannot exclude confounding, regression to the mean, or spontaneous symptom fluctuation. The 15 case reports in this synthesis provide hypothesis-generating rather than hypothesis-testing evidence.

The three case series offer marginally greater inferential utility by capturing intra-series variability as in Johnson et al. (2013), where outcomes across three paediatric cases ranged from marked improvement to partial response, highlighting the clinical diversity that single-case success reports often fail to reveal. Still, without formal comparison conditions, their certainty classification according to JBI standards remains low. Roushani and Mehrabizadeh Honarmand (2021), appraised separately as a single-case experimental design using a non-concurrent multiple baseline approach, provides stronger internal validity than a case series through its staggered intervention onset; however, the absence of an independent control group and the small sample (N = 3) limit generalisation, placing it at moderate-low certainty on the JBI quasi-experimental checklist.

The non-randomized controlled trial by Seyed Mousavi et al. (2024) represents a meaningful categorical step upward. Its JBI quasi-experimental checklist score of 9/9 and 0% attrition rate establish it as the highest-quality non-experimental study in the synthesis. The waitlist control condition enables a group-level causal inference that no case report offered that CBT produced significantly greater anxiety sensitivity and social isolation reduction than the passage of time alone. This finding carries genuine evidentiary weight, even without randomization.

Lewin et al. (2025) sits at the apex of this evidence hierarchy. Randomization, an active comparison condition, telehealth delivery enhancing ecological validity, and a prospectively registered two-site design all contribute to a study whose certainty classification under JBI RCT criteria is moderate, the highest in this review despite the relatively modest sample size ($N = 43$) and the absence of a long-term follow-up endpoint beyond 10 weeks post-enrollment. The 54% vs. 25% response differential between UP-C/A and PRT is the single most important quantitative finding in this body of literature, and it warrants replication at scale.

4. Discussion

4.1 Contextualization within the Broader Clinical Landscape

This review goes beyond simply assessing intervention effectiveness. Although the literature initially appeared disjointed comprising diverse methodologies across different demographic groups. Closer evaluation reveals a cohesive and progressive trajectory in how misophonia has been studied and treated over time.

Early treatment research established that misophonia could be addressed clinically, predominantly through single-case reports documenting individual responses to psychological and pharmacological approaches. The years since 2022 have brought meaningful methodological additions to this foundation: the first published RCT targeting youth with misophonia (Lewin et al., 2025), a quasi-experimental study with a defined control group (Seyed Mousavi et al., 2024), and a growing cluster of case-level reports using validated instruments such as the A-MISO-S and MQ rather than ad hoc clinical descriptions. The shift is

real, if incomplete, and this review captures it at a point where patterns are beginning to emerge with sufficient consistency to support cautious clinical inference.

What has not changed significantly is the instrument heterogeneity. We identified ten distinct primary outcome instruments across the 21 included studies. This is a methodological constraint that the field is imposing on itself, and it is the single most tractable barrier to evidence accumulation. If the next group of case reports, case series, and trials all use the A-MISO-S or MQ as primary instruments alongside one standardized anxiety measure, the synthesis possibilities three to five years from now will be dramatically richer than what this review could achieve.

Beyond measurement, the findings here add developmental specificity that prior reviews lacked. The caregiver–child discrepancy documented by Lewin et al. (2024) indicates that more reliable self-report from adolescents 14 years and above directly informs how outcome assessment should be structured in future trials. It also raises a design implication that has not yet been tested: whether UP-C/A or similar developmentally-adapted protocols produce differential outcomes across the 8–13 year and 14–18 year age bands. The current evidence cannot answer this question. The pharmacological literature, meanwhile, offers preliminary signals rather than actionable conclusions. SSRIs address misophonia's most common comorbidities reliably. Their effect on trigger reactivity itself is less certain, and the sequential augmentation approach documented in Karalis et al. (2022), with multiple agents added without clear clinical rationale for each, reflects the practical improvisation that still characterises pharmacological decision-making in this population.

The multimodal cases, particularly Storch et al. (2015) and Banyra et al. (2022), introduce family accommodation reduction and somatic comorbidity management as potentially important treatment components that purely individually delivered interventions do not address. This matters clinically. If misophonia is partly maintained by the accommodating behaviors of family members such as reorganising household routines to avoid triggering the affected individual, then treating the patient without modifying the family system may produce short-term symptom reduction that does not persist once treatment ends. Storch et al.'s (2015) explicit focus on family accommodation and the near-total elimination of those behaviors at follow-up represents a treatment design component that deserves systematic replication.

5. Summary and Conclusion

This systematic review synthesised 21 studies out of which 15 were case reports, three case series, one single case experimental design, one non-randomized controlled trial, and one RCT published between 2013 and 2025, evaluating interventions for misophonia in individuals aged 10–35 years. The central finding is directional and clinically meaningful, if not yet definitive. Structured psychological intervention, particularly CBT and its variants, consistently reduces misophonia symptom severity across case-level, quasi-experimental, and randomized designs. The magnitude of those reductions as indexed across A-MISO-S, MQ, GAF, SFive, MAQ, and other instruments frequently represents movement across at least one full severity tier, from severe to moderate or from moderate to mild. This is not insignificant. For adolescents and young adults whose social lives, family interactions, and educational involvement are shaped by avoiding triggers due to misophonia, even a modest adjustment in severity classification can lead to meaningful functional improvements.

What this review makes most clear is the pattern of development that has taken shape since 2013. Early clinical reports like Bernstein et al. (2013), Johnson et al. (2013), Storch et al. (2015) documented that CBT-based approaches were deliverable, acceptable to patients and families, and associated with positive outcomes. That was the contribution of the first decade: proof of concept at the case level. The second phase spanning approximately 2018 to 2022 saw diversification of psychological approaches (DBT, ACT, MIT, emotion regulation models) and early attempts at within-series comparison. The third phase from 2022 onwards introduced controlled designs. Seyed Mousavi et al.'s (2024) quasi-experimental trial and Lewin et al.'s (2025) RCT are not merely incremental additions to the literature. They represent a structural change in what the field can claim to know: that CBT reduces misophonia symptoms more than waitlist passage of time (Seyed Mousavi et al., 2024) and more than psychoeducation combined with relaxation training (Lewin et al., 2025).

The pharmacological evidence is still in an earlier stage of development. SSRIs consistently help reduce comorbid anxiety and depression and may offer slight additional benefit for misophonic reactivity, but no medication has shown enough specific effectiveness for misophonia to justify being used as a first-line, standalone treatment. Stimulants appear to warrant further investigation in presentations where ADHD-spectrum attentional amplification is a proximal mechanism.

For youth and young adult populations specifically, developmental considerations must be integrated into intervention design rather than added on afterward. The age-stratified reliability of self-report with adolescents under 14 years providing less stable symptom estimates than older youth (Lewin et al., 2024) has direct consequences for how outcomes should be assessed in future trials, and family accommodation reduction must be treated as a central rather than a peripheral component of treatment for adolescents living with family members serving as primary triggers.

5.1 Clinical implications

Frontline clinicians, child psychiatrists, and audiologists managing misophonia in adolescents and young adult populations can adopt several practical insights from this synthesis. CBT protocols that include graduated exposure with response prevention, cognitive restructuring of threat appraisals, and structured family accommodation reduction are currently the most empirically supported intervention modality for this population, and clinicians should not delay starting them in favor of pharmacological options that lack specific support for misophonia. For adolescents with comorbid emotion dysregulation, depression, or a history of poor response to standard CBT, DBT-based or emotion regulation-focused approaches should be considered early on, rather than reserved as later, backup treatments. For children under 14, clinicians should routinely gather both self-reports from the child and caregiver reports using validated tools like the A-MISO-S or MQ, since differences between these reports can offer important clinical insight; for youth aged 14 and older, self-reports from these instruments are sufficiently reliable for monitoring progress. Pharmacotherapy, especially SSRIs, is suitable for addressing comorbid anxiety and depression, which often accompany misophonia; however, prescribers should inform patients and families that existing evidence does not confirm that medications specifically target misophonia. Audiologists who encounter misophonia should acknowledge that tinnitus retraining therapy and sound generators have not been tested in controlled studies for this group, and they should promptly refer patients to clinicians skilled in exposure-based methods rather than managing the condition alone through audiological means.

5.2 Limitations

- The search was restricted to four English-language databases, excluding grey literature, conference proceedings, and non-English publications, which likely underestimates the true volume of global misophonia research.
- Some studies could not be retrieved in full, requiring data extraction from abstracts alone, introducing a risk of information bias
- The synthesis is heavily dominated by positive findings, particularly among case reports, as studies reporting treatment failure are rarely published, likely inflating observed response rates.
- Marked variability in outcome measures across the 21 studies prevented quantitative pooling or meta-analysis, limiting the precision of conclusions drawn.

5.3 Future directions

- Adequately powered randomised controlled trials with standardised outcome batteries are the field's most urgent priority, with minimum samples of N = 100–150 per arm to allow subgroup analyses by age, comorbidity, and symptom severity.
- Long-term follow-up data beyond two years are entirely absent from this synthesis, and future studies must incorporate 12- and 24-month endpoints as pre-registered primary outcomes.
- Trials should stratify participants by developmental age band and compare family-adapted protocols against standard CBT.
- No pharmacological study used a validated misophonia-specific primary outcome measure; future drug trials should pre-register misophonia symptom severity as the primary endpoint with structured adverse event monitoring.
- Studies are predominantly female and geographically concentrated; gender-diverse and cross-cultural sampling is needed to determine whether treatment response and family accommodation patterns vary across populations.

References

1. Alekri, J., & Al Saif, F. (2019). Suicidal misophonia: A case report. *Psychiatry Clin. Psychopharmacol.*, 29(2), 232–237. https://doi.org/10.1080/24750573.2019.1597585
2. Avanoğlu, K. B., & Kılıç, C. (2024). Treatment of misophonia with cognitive behaviour therapy: A case report. *Eur. Psychiatry*. https://doi.org/10.1192/j.eurpsy.2024.880
3. Banyra, O., Jourkiv, O., Nikitin, O., Ventskivska, I., Kechur, Z., & Didkovskiy, V. (2022). Misophonia in urological patients: Our experience of management. *Arch. Psychiatry Res.*, 58, 119–130. https://doi.org/10.20471/may.2022.58.01.13
4. Bernstein, R. E., Angell, K. L., & Dehle, C. M. (2013). A brief course of cognitive behavioural therapy for the treatment of misophonia: A case example. *Cogn. Behav. Ther.*, 6, e10. https://doi.org/10.1017/S1754470X13000172
5. Cecilione, J. L., Hitti, S. A., & Vrana, S. R. (2021). Treating adolescent misophonia with cognitive behavioral therapy: Considerations for including exposure. *Clin. Case Stud.*, 21(3). https://doi.org/10.1177/15346501211045707
6. Gregory, J., & Foster, C. (2023). Session-by-session change in misophonia: A descriptive case study using intensive CBT. *Cogn. Behav. Ther.*, 16, e18. https://doi.org/10.1017/S1754470X23000107
7. Jager, I., de Koning, P., Bost, T., Denys, D., & Vulink, N. (2020). Misophonia: Phenomenology, comorbidity and demographics in a large sample. *PLOS ONE*, 15(4), e0231390. https://doi.org/10.1371/journal.pone.0231390
8. Johnson, P. L., Webber, T. A., Wu, M. S., Lewin, A. B., Murphy, T. K., & Storch, E. A. (2013). When selective audiovisual stimuli become unbearable: A case series on pediatric misophonia. *Neuropsychiatry*, 3(6), 569–575. https://doi.org/10.2217/npy.13.70
9. Kamody, R. C., & Del Conte, G. S. (2017). Using dialectical behavior therapy to treat misophonia in adolescence. *Prim. Care Companion CNS Disord.*, 19(5), 17l02105. https://doi.org/10.4088/PCC.17l02105
10. Karalis, P., Carter, C., Coplan, B., & Olabisi, J. (2022). Treatment challenges for misophonia with comorbid mood and anxiety disorders: A case report. *Psychiatry Res. Case Rep.*, 1, 100012. https://doi.org/10.1016/j.psycr.2022.100012
11. Lamba, D., & Bajaj, M. K. (2023). Trans-diagnostic cognitive behavioral therapy (CBT) approach for managing misophonia: A case report. *Indian J. Clin. Psychol.*, 50(3), 99–103.
12. Lewin, A. B., Milgram, L., Cepeda, S. L., Dickinson, S., Bolen, M., Kudryk, K., Bolton, C., Karlovich, A. R., Grassie, H. L., Kangavary, A., Harmon, S. L., Guzick, A., & Ehrenreich-May, J. (2024). Clinical characteristics of treatment-seeking youth with misophonia. *J. Clin. Psychol.*, 80(6), 1405–1419. https://doi.org/10.1002/jclp.23672
13. Lewin, A. B., Milgram, L., Cepeda, S. L., Karlovich, A., Dickinson, S., Bolen, M., Harmon, S. L., Small, B. J., & Ehrenreich-May, J. (2025). Treatment of youth misophonia: A randomized controlled trial comparing transdiagnostic cognitive-behavioral therapy to psychoeducation and relaxation training. *Behav. Ther.* Advance online publication. https://doi.org/10.1016/j.beth.2025.04.006
14. Mattson, S. A., D'Souza, J., Wojcik, K. D., Guzick, A. G., Goodman, W. K., & Storch, E. A. (2023). A systematic review of treatments for misophonia. *Pers. Med. Psychiatry*, 39–40, 100104. https://doi.org/10.1016/j.pmip.2023.100104
15. Muller, D., Khemlani-Patel, S., & Neziroglu, F. (2018). Cognitive-behavioral therapy for an adolescent female presenting with misophonia: A case example. *Clin. Case Stud.*, 17(4). https://doi.org/10.1177/1534650118782650
16. Natalini, E., Fioretti, A., Eibenstein, R., & Eibenstein, A. (2024). Metacognitive interpersonal therapy for misophonia: A single-case study. *Brain Sci.*, 14, 717. https://doi.org/10.3390/brainsci14070717
17. Osuagwu, F. C., Osuagwu, V. C., & Machoka, A. M. (2020). Methylphenidate ameliorates worsening distractibility symptoms of misophonia in an adolescent male. *Prim. Care Companion CNS Disord.*, 22(5), 19l02553. https://doi.org/10.4088/PCC.19l02553

18. Petersen, J. M., & Twohig, M. P. (2022). Acceptance and commitment therapy for a child with misophonia: A case study. *Clin. Case Stud.* https://doi.org/10.1177/15346501221126136

19. Reid, A. M., Guzick, A. G., Gernand, A., & Olsen, B. (2016). Intensive cognitive-behavioral therapy for comorbid misophonic and obsessive-compulsive symptoms: A systematic case study. *J. Obsessive Compuls. Relat. Disord.*, 10, 1–9. https://doi.org/10.1016/j.jocrd.2016.04.009

20. Roushani, K., & Mehrabizadeh Honarmand, M. (2021). The effectiveness of cognitive-behavioral therapy on anger in female students with misophonia: A single-case study. *Iran. J. Med. Sci.*, *46*(1), 61–67. https://doi.org/10.30476/ijms.2019.82063. PMID: 33487793; PMCID: PMC7812503.

21. Schröder, A., Vulink, N., & Denys, D. (2013). Misophonia: Diagnostic criteria for a new psychiatric disorder. *PLOS ONE*, 8(1), e54706. https://doi.org/10.1371/journal.pone.0054706

22. Seyed Mousavi, S. K., Pourmohseni Koluri, F., Ghaffari, A., & Taklavi, S. (2024). The effectiveness of cognitive-behavioral therapy on social isolation and anxiety sensitivity of adolescent girls with misophonia. *J. Clin. Psychol. Stud.*, 15(56). https://doi.org/10.22054/JCPS.2025.82658.3153

23. Spencer, S. D., Mangen, K. H., Omar, Y., & Storch, E. A. (2024). Acceptance and commitment therapy for an emerging adult female with misophonia: A case study. *J. Psychiatr. Pract.*, 30(5), 374–378. https://doi.org/10.1097/PRA.0000000000000800

24. Storch, E. A., McGuire, J. F., & Wu, M. S. (2015). Cognitive-behavioral therapy for 2 youths with misophonia. *J. Clin. Psychiatry*, 76(5), 573–574. https://doi.org/10.4088/JCP.14cr09343

25. Wu, M. S., Lewin, A. B., Murphy, T. K., & Storch, E. A. (2014). Misophonia: Incidence, phenomenology, and clinical correlates in an undergraduate student sample. *J. Clin. Psychol.*, 70(10), 994–1007. https://doi.org/10.1002/jclp.22098

26. Zarotti, N., Tuthill, A., & Fisher, P. (2022). Online emotion regulation for an adolescent with misophonia: A case study. *J. Cogn. Psychother.* https://doi.org/10.1891/JCP-2021-0015