The lived experiences of people with misophonia in educational, work, and everyday settings: an Interpretative Phenomenological Analysis

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There are no conflicts of interest to report.

Ethics approval statement

This study gained approval from the Research Ethics Committee of the School of Human Sciences at the University of Greenwich and adheres to British Psychological Society ethical guidelines

Abstract

Background and Objectives

Misophonia is a condition characterised by the experience of negative emotional and physiological reactions to specific sounds, such as chewing, pen tapping or sniffing (Potgieter et al., 2019). People suffering from misophonia experience irrational and disproportionate feelings of anger, disgust, and harm ideation that negatively impact their lives. The current study aims to address a gap in the literature by exploring people's lived experience with self-diagnosed misophonia in educational, work, and everyday settings.

Methods

Five interviews were conducted with individuals who self-diagnosed as having misophonia. Interview transcripts were analysed using Interpretative Phenomenological Analysis.

Results

The analysis revealed four superordinate themes: 'Phenomenology of the misophonia reaction', 'Susceptibility to triggering sounds', 'Coping strategies when triggered', and 'Levels of attention and concentration'. Misophonia was reported as having wide-ranging effects on mental health and familial/social relationships. Coping strategies that re-direct attention and concentration, such as mindfulness techniques, were reported to be effective in ameliorating aversive reactions.

Conclusions

The findings provide the first phenomenological insight into misophonia through ideographical analysis of a small number of cases. Future research and implications of the study are discussed.

Keywords: *misophonia, phenomenology, attention, lived experiences, Interpretative Phenomenological Analysis*

Introduction

Misophonia is a complex condition characterised by irrational and negative emotional and physiological reactions to certain sounds, which disrupts a person's capacity to function effectively (Brout et al., 2018**;** Jastreboff & Jastreboff, 2001; Potgieter et al., 2019; Wu et al., 2014). It was first recognised in 1997 and referred to as Selective Sound Sensitivity Syndrome, or 4S (Bernstein et al., 2013), and was then later referred to as misophonia by Jastreboff and Jastreboff (2001). Misophonia is known to be a persistent, chronic condition that generally worsens with time and is associated with a decreased quality of life (Cavanna, 2014; Claiborn et al., 2020; Edelstein et al., 2013; Schröder et al., 2013; Wu et al., 2014). The current study aims to explore the lived experiences of people with misophonia by conducting an Interpretative Phenomenological Analysis of a small number of self-diagnosed cases. We selected self-diagnosed cases as formal diagnoses of misophonia remain very rare.

People with misophonia experience abnormally intense reactions to specific sounds. Most commonly, such sounds can be oral or nasal, such as chewing, heavy breathing, sniffling, and coughing, but can also include repetitive clicking, typing, tapping, noise from using utensils or keys, and a clock ticking, among others (Dozier, 2015a; Hansen et al., 2021; Jager et al., 2020; Jastreboff & Jastreboff, 2002; Wu et al., 2014). When triggered by such sounds, people report experiencing irrational levels of anger, disgust, frustration, extreme irritation, hate, distress, anxiety, and harmful ideations towards the source of the noise (Dozier, 2015; Jager et al., 2020; Jastreboff & Hazell, 2004; Potgieter et al., 2019). Furthermore, the neurophysiological reaction manifests in heavy breathing (Dozier, 2015), muscle tension, pressure and/or pain in the chest, arms, or head (Bernstein et al., 2013; Edelstein et al., 2013), as well as increased muscular tone,

tachycardia, hypertension, and hyperthermia (Cavanna, 2015). In addition, people with misophonia often report feeling a lack of self-control and a desire to act out in triggering situations (Schröder et al., 2013; Tunç and Başbuğ, 2017). Research findings suggest that people experience stronger reactions to triggers when in familiar environments, such as being around family, friends, or in educational or work settings (Bernstein et al., 2013; Edelstein et al., 2013). The most common coping strategies include wearing earplugs or headphones, avoiding triggering situations, engaging in positive internal dialogue, confrontation, and even quitting work (Dozier, 2015; Edelstein et al., 2013; Potgieter et al.,2019; Sanchez & Silva, 2018; Schröder et al., 2013; Schröder et al., 2017; Wu et al., 2014). Moreover, some extreme cases report attempts of self-induced deafness (Veale, 2006) and even suicide (Alekri & Al Saif, 2019) directly linked to misophonic experiences. Evidently, misophonia is a highly distressing condition that negatively affects the sufferers' lives.

Prevalence and Onset

According to research, the prevalence of misophonia varies, ranging from 6% (Zhou et al., 2017) to 20% (Wu et al., 2014) and has been reported as high as 49.1% (Naylor et al., 2021). Although, misophonia is a widely experienced condition (Alekri & Al Saif, 2019; Quek et al., 2018; Zhou et al., 2017) only a small number of individuals report experiencing severe to extreme reactions (Naylor et al., 2021). The onset of misophonia typically occurs in early adolescence, around 13 years of age (Dozier, 2015; Edelstein et al., 2013; Rouw & Erfanian, 2018; Schröder et al., 2013), with some studies reporting onset as early as seven years of age and as late as 50 years of age (Claiborn et al. 2020). Earlier onset age is associated with a greater level of misophonia severity, which is correlated positively with the severity of physical

reactions and a greater range of triggering sounds (Claiborn et al., 2020). Edelstein et al. (2013) suggest that misophonia is a disorder that produces distinct autonomic effects not seen in typically developed individuals. However, Claiborn et al. (2020) argue that the later-life onset supports the notion that misophonia is a conditioned response rather than a neurodevelopmental one.

Diagnostic criteria, comorbidity and treatment

Misophonia remains an under-studied condition, with unclear aetiology and rudimentary diagnostic conceptualisation (Brout et al., 2018; Cavanna & Seri, 2015; Palumbo et al., 2018; Taylor, 2017). Currently, there are no established diagnostic criteria within the Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM–5; American Psychiatric Association, 2013) or the International Statistical Classification of Diseases and Related Health Problems 10th revision (ICD-10; Kumar et al., 2017; Potgieter et al. 2019). In audiology literature, misophonia is considered to be categorizable with disorders such as tinnitus (perception of internally abstract sounds), hyperacusis (heightened sensitivity toward normal intensity or louder sounds) and phonophobia (extreme fear of specific sounds; Jastreboff & Hazel, 2004; Jastreboff & Jastreboff, 2015; Potgieter et al., 2019). While in psychological literature, misophonia is linked to conditions such as obsessive-compulsive disorder (OCD; Cusack et al., 2018; Reid et al., 2016), anxiety (Quek et al., 2018), depression, attention-deficit hyperactivity disorder (ADHD), Tourette syndrome, posttraumatic stress disorder (PTSD), eating disorders (Kluckow et al., 2014), panic disorders, and personality disorders, among other conditions (Erfanian et al., 2019; Rouw & Erfanian, 2018; Wu et al., 2014; Zhou et al., 2017).

Furthermore, Natalini et al. (2020) assessed personality disorders and maladaptive

interpersonal schemas in three people with misophonia. They reported that all the participants reported experiencing severe misophonic symptoms and suffered from at least one personality disorder. In particular, obsessive-compulsive personality disorder (OCPD), and heightened maladaptive interpersonal schemas are prominent, with perfectionism being represented in all cases. Notably, one of the main limitations of Natalini et al's (2020) study is the small sample limiting the generalisability of their findings. Further, Natalini et al. (2020) also failed to explore the underlying causes of the personality disorders in each participant. Therefore, the results are insufficient to establish a relationship between misophonia and personality disorders. Although the findings have clinical implications, the relationship between misophonia and personality disorders should be explored further to provide sufficient evidence for the relationship between the two conditions (Jager et al., 2020; Kumar et al., 2017; Schröder et al., 2013). However, Natalini et al's (2017) results support the findings of Schröder et al. (2013), who reported OCPD in over half of their study sample (42 patients). Additionally, a recent study by Cassiello-Robbins et al. (2021) suggests that individuals with severe misophonia are more likely to meet the criteria for a personality disorder. However, the sample size in the studies is also relatively small, reducing the generalisability and validity of their conclusions (Cassiello-Robbins et al., 2021, Schröder et al., 2013).

While there is currently no scientifically supported treatment for misophonia, preliminary research (Schroder et al., 2017) and case studies (Bernstein et al., 2013; McGuire et al., 2015; Muller et al., 2018) suggest that Cognitive Behaviour Therapies (CBTs) can help reduce symptom severity. For example, Schröder et al. (2017) conducted a study where 90 participants with misophonia attended eight bi-weekly CBT sessions, with 48% reporting an improvement in

their condition. Other case studies report similar results (Cecilione et al., 2021; Muller et al., 2018; Reid et al., 2016; Schneider & Arch, 2017; Vanaja et al., 2020). However, the studies' sample consisted predominantly of female adolescents, questioning whether treatment would have similar effects on other populations. Despite that, CBT methods and techniques such as, desensitisation, assertiveness training, emotion regulation, counterconditioning, pre-recorded files/in-vivo exposures, avoiding earplugs, or sessions with counsellors were reported to be effective in decreasing misophonia severity (Bernstein et al., 2013; Schneider & Arch, 2017; Roushani & Mehrabizadeh Honarmand, 2021). Alekri and Saif (2019) also report on the effective use of Selective Serotonin Reuptake Inhibitors (SSRI) alongside psychotherapy.

Neurophysiology findings

According to Møller (2011), there is increased connectivity between the limbic and the sympathetic nervous systems, which are associated with abnormal processing of sounds. Schröder et al. (2014) used EEG and the oddball paradigm to measure auditory event-related potentials (ERPs) differences. In a sample of 20 individuals with misophonia and 14 matched controls, they found that the mean amplitude of a marker N1, which is linked to early attention and detection of abrupt sensory changes (Rinne et al., 2006), was significantly diminished in patients with misophonia. These results suggest an underlying neurobiological deficit in people with misophonia and a basic impairment in auditory processing in misophonia patients. Additionally, Jastreboff and Jastreboff (2013) proposed that misophonia follows the principles of conditioned reflexes with enhanced activity between the auditory and the limbic systems of the brain.

San Giorgi (2015) reported similar findings; they conducted an fMRI study and found

hyperactivation in the auditory cortex and the left amygdala, which is a region associated with emotional reactivity. Moreover, fMRI data by Kumar et al. (2017) suggests that for people with misophonia, triggering sounds activate hyperactivity in the anterior insular cortex (AIC), a region associated with sensory processing, decision-making, and motor control. There is abnormal functional connectivity between the AIC region and medial frontal, medial parietal, and temporal regions, as well as abnormal myelination in the medial frontal cortex. Recently, Kumar et al. (2021) proposed a model for misophonia based on "hyper-mirroring" of the orofacial actions of others and reported that there is increased functional connectivity between the auditory, visual, and motor cortices in people with misophonia emphasising the complex nature of the condition. Additionally, Schröder et al. (2019) reported similar findings to suggest that specific audio-visual cues may elicit increased activity in the right insula, right anterior cingulate cortex (ACC), and right superior temporal cortex (auditory cortex and silenced network) in people with misophonia. These findings further support the notion that misophonia has distinguished underlying symptomology.

Attention and Concentration

One of the main characteristics of misophonia is the overwhelming reaction in people and the effect it has on their functioning. Seaborne & Fiorella (2018) performed a comprehension test on a sample of college students. Despite the results being non-significant, they observed that the students who had higher sensitivity to misophonia sounds performed worse on the comprehension test but performed better in the control group, and misophonia sensitivity significantly moderated the effect of the trigger sound on learning. Furthermore, Silva and Sanchez (2019) stated that people with misophonia may have an impairment in their selective

attention. They performed a Dichotic Sentence Identification (DSI) on 40 normal-hearing participants: 10 with misophonia, 10 with tinnitus and without misophonia, and 20 with both misophonia and tinnitus. They concluded that there was a significant difference in the average number of correct responses for people with misophonia compared to the two other groups, suggesting that individuals with misophonia may have selective attention impairment when exposed to triggering sounds. Additionally, Daniels et al. (2020) conducted a Stroop effect task on misophonia participants and matched controls. Results suggest that a stronger misophonia reaction is associated with a higher Stroop effect, meaning that more severe levels of misophonia are associated with worse cognitive control. Moreover, Frank et al. (2020) administrated the Attention Network Test (ANT) to 11 people with misophonia and 11 matched controls. They observed that the misophonic group had difficulties achieving and maintaining attention during the experiment. However, due to the cross-sectional nature of the study, it was not possible to conclude whether that difference is based on a previous underlying neuropsychological deficiency.

Rationale and Current Study

To the best of the authors' knowledge, the only qualitative study on misophonia is Dozier and Morrison's (2017) interview study on physical and emotional responses.. Twenty-seven participants took part in brief online interviews in which various trigger stimuli were activated and responses were discussed. The results focused on physical responses to auditory and visual triggers. The study reported physical responses to triggers in a range of locations across the body, including the shoulders, neck, jaw, thighs and toes. There is also a brief tabular presentation of emotional responses, which are anger, anxiety, desire for escape, disgust, fear, and sadness. This

single interview-based qualitative study provides important information on physical and emotional responses. However, there remains a need for a presentation of first-person, in-depth information on experiences with misophonia to convey the subjective lifeworld of people who struggle with this condition. The current study aims to address that gap in the literature and extend previous knowledge by examining people's experiences with misophonia in their academic, work, and everyday lives. Deriving from previous literature we propose the following research questions aiming to explore four areas of people's lives: phenomenology, symptoms severity, coping and attention:

RQ1: What is the phenomenology of the misophonic reaction?

RQ2: Do people with misophonia perceive any links between their symptoms' severity and life events?

RQ3: How do people with misophonia cope in terms of emotional, cognitive, and behavioural strategies in educational or work environments?

RQ4: How does misophonia affect the sufferers' attention capacity?

Method

Design

This study used a qualitative design to research in detail and gain comprehensive information about people's experiences with misophonia. Interpretive Phenomenological Analysis (IPA) was implemented, which aims to provide an in-depth, idiographic insight into the personal experience of a phenomenon or set of past experiences (Smith & Osborn, 2015).

Participants

In this study, participation took a total sample of 5 people above the age of 18 ($M = 42$).

All participants were recruited through purposeful sampling (See Table 1). The smaller sample size is appropriate for IPA as it allows the researcher to examine each participant's experiences in a greater depth (Hefferon & Gin-Rodriguez, 2011; Robinson, 2014).

Table 1. *Participants descriptive information*

Pseudonym	Age	Approx age of onset	Gender	Country	Occupation
Sandra	60	7	Female	UK	Employed
Pete	66	Adolescence	Male	UK	Retired
Marissa	35	Entire life	Female	USA	Employed
Roni	27	Early adolescence	Female	Israel	Student/Employed
Luisa	22	20	Female	Mexico	Student

All participants were invited through a recruitment message posted in two social groups dedicated to misophonia on the social media platform Facebook. Individuals interested were invited for an online interview at a time and date agreed upon in advance by both the participant and the researcher. All participants were informed in advance that they would not be rewarded with any incentives.

The inclusion criteria consisted of the participants to self-identify with misophonia. Additionally, the participants had to be above the age of 18 and never have had a diagnosis of a condition affecting their attention. The latest criteria aimed to provide a sample that did not have any distorted attention capacity as one of the research questions examined how misophonia affects the levels of concentration.

Procedure

All the participants were provided with an information sheet outlining detailed information about the nature of the study. Each participant was required to read and supply a signed consent form prior to the interview and was debriefed post the interview. Prior to conducting the interviews, each participant was assured of confidentiality and its limits. They were encouraged to discuss their experiences and share as much as they felt comfortable without any suggestions from the researcher. Participants were also informed that they could omit any questions, take as many breaks as they needed to, or withdraw from participating at any moment without giving an explanation.

The data was collected by conducting semi-structured interviews and using open-ended questions, such as "*Tell me in your own word how it feels when something triggers you*." (See Appendix for full list of questions). This provided flexibility to the researcher when examining the people's experiences (Hefferon & Gin-Rodriguez, 2011). Interviews were conducted online using Microsoft Teams or Zoom platforms. All interviews were audio and video recorded, and each participant was informed before the recording started. The average duration of the interviews was 45 minutes, ranging between 22 to 57 minutes. All recordings were transcribed, anonymised, and later destroyed.

This study gained approval from the Department Research Ethics Committee at the home university.

Data Analysis

IPA aims to analyse experiences and life events from the participant's own perspective. It follows three main principles: phenomenology, hermeneutics, and an idiographic approach

(Pietkiewicz & Smith, 2012; Smith et al., 2009). The emphasis on phenomenology means that it aims to connect with a person's subjective worldview, and the structure thereof, in a way that brackets previous assumptions. Hermeneutics refers to the process of interpreting experience and the meaning they have assigned to it through verbal, semantic and conceptual layers that mean knowledge cannot be a direct representation of reality. Smith & Osborn (2015) describe the *double* hermeneutic process in qualitative research; this process involves the participant interpreting their experience in narrative form, and subsequently, the researcher interprets that interpretation. Thirdly, the idiographic approach focuses on conveying the uniqueness of the person's perspective and their understanding of the world rather than combining participants into a group prior to analysis. The research interprets each case individually and only then looks at convergence and divergence across all of them, ensuring that samples are sufficiently small that the individual voice can still be heard even after general themes are formed (Nizza & Smith, 2021).

The data in this study were analysed by following Smith et al's (2009) seven steps of IPA analysis: (1) reading and re-reading, (2) initial coding, (3) developing emergent themes, (4) seeking relationships and clustering themes, (5) moving to the next case, (6) looking for patterns across participants, and (7) taking interpretations to deeper levels.

Results

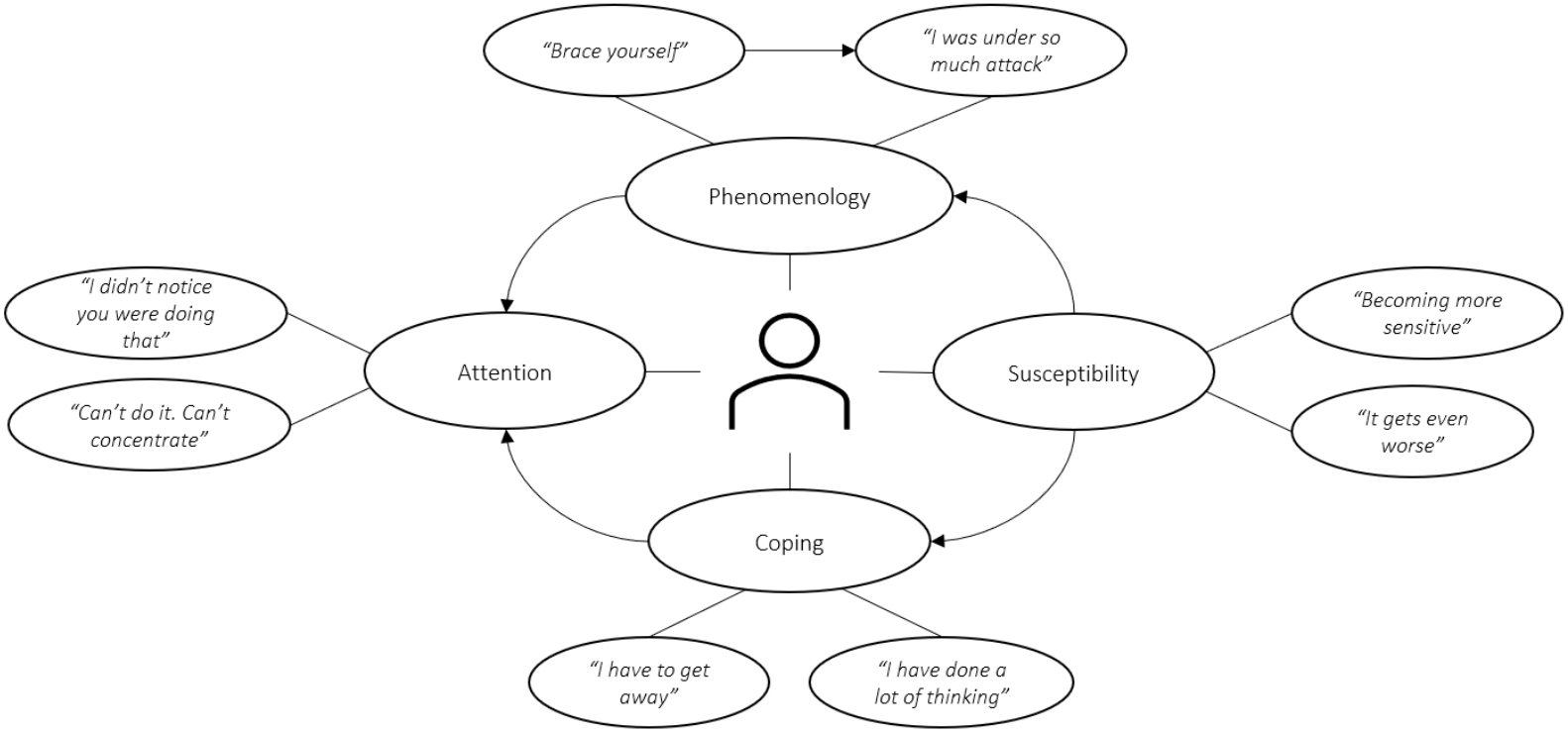
Transcript coding and IPA analysis identified four superordinate themes, each comprised of two subordinate themes which are presented in Table 2. The themes developed in this study illustrate how people experience the misophonia reaction and how it affects their lives and functioning in

academic, work, and everyday environments. Figure 1 displays the relationships between the different themes.

Table 2 *Table of Superordinate Themes*

Superordinate themes	**Subordinate themes**
Phenomenology of the misophonia reaction	"Brace yourself": Effects on emotions, cognitions, and behaviours
	"I was under so much attack": The aftermath
Susceptibility to triggering sounds	"Becoming more sensitive": Increased sensitivity over time
	"It gets even worse": Mental and physical susceptibility to triggers
Coping strategies when triggered	"I have to get away": Avoidant coping
	"I have done a lot of thinking": Internal Coping
Levels of attention and concentration	"Can't do it. Can't concentrate": Inability to pay attention
	"I didn't notice you were doing that": Attention absorption on other sounds stimuli

Figure 1. *Relationships between experiential and emerging themes*



Note: Connections between themes: the arrow sign represents the direction of influence.

Superordinate Theme 1. Phenomenology of the misophonia reaction

"Brace yourself": Effects on emotions, cognitions, and behaviours

The *"Brace yourself"* theme is characterised by statements related to the experience of misophonia and how misophonia affects the participant's emotions, cognitions, and behaviours. Every participant described experiencing irrational feelings of anger, irritation, rage, and frustration. Further, some of the participants talked about experiencing psychological (emotional) pain and argued that it differs from the bodily sensations they experience while triggered. The participants shared that they struggle to make "sense" of their psychophysiological reactions when triggered, as the noise they were hearing did not bother anybody else: "You really question your sanity." The overwhelming feelings made them feel as if there was "something wrong" with them and that they might be mentally ill. Although putting a name to their condition did not provide an improvement or a solution to their experiences, each participant expressed a feeling of "relief" and a sense of normalisation for their experiences. Additionally, there was a presence of a sense of wonder about how and why they developed misophonia. However, the psychophysiological experiences seem to be the primarily acute outcome when triggered, with one of the participants sharing:

> In the beginning, I would only notice just like anger. Mostly, but now, in the last couple of years, it, it becomes like. I get like hot sensation and, and high blood pressure, and I can feel my heart like beating really quickly. Uhm, and also the like, like real anger like I don't know where it comes from. (Roni)

All the participants talked about themselves feeling "bad", "intolerable", "abusive", and saw themselves an "awful human" for the way they were reacting when triggered. They talked about the impulse of stopping the triggering noise at any cost. The participants expressed the overwhelming need to manifest that frustration into physical violence. However, there was a constant fear of ever "attacking someone", Luisa commented: "I hope I

never try to physically hurt someone." Overall, the participants' reflections indicate that they experience feelings of helplessness and vulnerability:

> Part of the problem is that you feel vulnerable to it. You you, you feel as though you're out of control you can't, you can't stop what the other person does. You feel helpless and, and I, I don't think there's anything you can do other than internalise it. Try and fight it from within, you know. You know, it's silly, you know, it, it doesn't make any logical sense. So you, you, you have, you force, you have to force yourself to. What's the word? To try and ignore it to try and come [sigh]. Yeah, it's difficult really, but I don't think there's any way of, I don't think I found a way that works. (Pete)

Moreover, the participants shared experiencing "panic" simply by seeing a potential trigger happening and wondering: "How do I get out of this?" Misophonia also seems to elicit feelings of helplessness in the participants, with Luisa sharing: "I think the hardest part is that you can't, you can't do anything to really stop [the sound]".

There was a sense of desperation in all the transcripts. This was in the core of the sufferer's inability to prevent their reactions, indicating that the person continues to experience high levels of helplessness that stay present even after the triggering sound has stopped. Furthermore, the intense negative emotional reactions seem to condition a state of anticipatory anxiety for any possible future situation when one might be triggered:

> 'Cause you're you're waiting for the next trigger all the time, you know. To brace yourself. (Pete)

"I was under so much attack": The aftermath

The second theme reflects on the destructive impact following the chronic experience of misophonia. Participants talked about feeling "not understood" and "rejected" by their close ones as no one could truly understand their experiences. Additionally, the intensive aversive reactions and the conditioned states of anxiety produced negative consequences in the participants' lives. The chronic anxiety leads the sufferers to be actively seeking avoidance of any potential triggering situations, such as avoiding family dinners, educational

and work engagements out of fear of being triggered: “It’s just really hard sometimes to be around people.” (Roni). This leads to isolation and feelings of loneliness, as the main aversive noise sources are often their close ones. Sandra and Marissa shared they avoid eating together with their spouses and compromise by having their main meal with them. In the case of Pete, misophonia and his consequent outbursts were one of the reasons for the separation between him and his wife:

> We’re living separately now, and it’s one of the reasons why we got separated because, you know, because the problem is always having with, you know, it just made me angry. […] uhm things like that has affected my relationship with a lot more friends. You know, because I, I suddenly became extremely ratty, and you know, extremely short tempered, you know. Because I was under so much attack. (Pete)

The negative impact of misophonia on mental health was present in all the transcripts. Despite being conscious of the normality of the sound, some of the participants expressed that it felt “rude” and “disrespectful” when others were producing the triggering sounds. Additionally, participants reported feeling anxious simply in the presence of other people: “Makes me nervous around people but also wanna keep distance from people.” (Roni). Moreover, all participants shared how much their personal lives, and the ones of their close ones, have been affected by misophonia. Most importantly, it seems that the participants experience a state of incongruence between the natural need for interpersonal relationships and to be with one’s loved ones, and the need to avoid experiencing a misophonic reaction. Further, strong negative mental health outcomes, such as suicidal ideations, were present in one of the participants who shared:

> I’ve had suicidal thoughts about this, […] because of how much I hate it and how little control I felt over it and how much I know it hurts people. I’m not gonna kill myself or anything. Uhm, but I I have the thoughts all the, all the time when this happens. Uhm, like it would be easier to not be this obnoxious, easily annoyed person you know to not have to be a person that other people feel uncomfortable around. (Marissa)

Superordinate Theme 2. Susceptibility to triggering sounds

"Becoming more sensitive": Increased sensitivity over time

The *"Becoming more sensitive"* theme reflects on the influence of time over the susceptibility to triggering sounds. Most of the participants reported noticing an increase in the number of sounds and an overall sensitivity that would trigger them overtime. Marissa shared that she noticed additional triggers and her sensitivity to sounds increased following serious health complications of her father.

> (His) health declined a bit, about five years ago. And I think that my noise tolerance, I feel like it probably got worse around that time. (Marissa)

Pete noted an increase in his sensitivity with age: "it gets worse with age". He also stated that he has noticed new noises and sounds that started to trigger him:

> When I watch television, there are certain presenters that have noisy mouths. Not, not loud speakers, but they just have a lot of mouth noise, incidental mouth noise between speaking. And that's never used to bother me, but now it does. (Pete)

Whereas, Roni mentioned the symptoms increased with the start of university. In all three cases, a change in susceptibility is associated with the passage of time but also a certain change in the surrounding. However, the participants expressed the passage of time being the bigger influencer:

> I did notice in the last couple of years since I started college at least, and that there are like more trigger sounds than I thought that I had. Uhm? Becoming more sensitive to to, uhm, like if it was only chewing and like whistling and some knuckle cracking, now it's like almost all the mouth sounds. (Roni)

"It gets even worse": Mental and physical susceptibility to triggers

The third theme reflects on the change in susceptibility due to the state of the person's mind and body. The theme was present only in the female participants. More specifically,

Sandra, Marissa and Roni talked about noticing being more susceptible to triggering noises when feeling stressed, anxious, worried, or upset: “It gets worse when you’re anxious or worry or upset” (Marissa).

> My tolerance for anything including sounds is is lower when when I'm worried about them [her parents]. (Marissa)

The physiological condition of the body was also reported as an indicator of higher sensitivity. The female participants reported noticing an increase in their severity of their reactions when they are experiencing tiredness, dehydration, as well as during their menstruation:

> Uhm, and also, I’ve noticed that like when I’m, when I’m on my period, it gets even worse. Which is new, I don’t know. I, I asked some people about it. They said that it also happens to them. So that sucks. (Roni)

> But I definitely notice that it's significantly worse when I'm not regulated. So when I'm when I'm stressed out or worried, or upset about anything else. Uhm, or, oh my gosh, if I haven't had enough water. If I'm dehydrated I, I've noticed like a huge correlation to my level of tolerance. (Marissa)

Those points provide an interesting view of the psychophysiological state in a person and how hormonal changes aggravate the misophonia reaction.

Experiential Theme 3. Coping strategies when triggered

“I have to get away”: Avoidant coping

This theme represents the type of coping in the majority of the triggering situations. There is unanimous agreement among the participants that there is a necessity to “get away” from the aversive noise. Sandra, Roni, and Marissa shared they have tried confrontation as a way to stop the noise. Pete talked about feeling “trapped” and mimicking the triggering sound as a way of coping. Sandra reported continuing eating if other people around her were eating, even if she was already full: “There’s something about eating yourself that does make it a little bit more tolerable”. Sandra, who used to work as a studio director for a broadcasting

company, also shared:

> So, you have to listen to this [production talk] regardless. Uhm, and people would eat apples and crisps, and it would be directly into my ear. […] you know that was awful 'cause you can't move. You can't go away […] my misophonia was part of my decision to leave the job that I've done for 14 years. (Sandra, 60)

Luisa talked about "desperately" trying to put on her headphones in an attempt to remove herself from the sound. The desperation in her endeavour to stop her emotional reactions at times manifests as self-harming (stabbing nails in wrists and face). Although she did not want to self-harm, she explained that hurting herself was the only way to "[release] the pressure" and get rid of the psychological pain. For others, the only coping strategies involved avoiding or leaving the triggering situation:

> In my academic life, especially in bigger classes. Uhm, I noticed that, like, I needed to take more breaks. Like, to leave the class more than other people, or more than I'm used to and. Uhm, you miss you miss information like that. You miss class like that. (Roni)

All of the external coping strategies, besides mimicking and continuous eating, involved direct avoidance of the triggering sounds or situations.

"I have done a lot of thinking": Internal coping

The following theme is characterised by the coping strategies participants employ in triggering situations in order to avoid displaying a negative reaction towards the source of the sounds. One of the most common ways to cope was rationalisation. All participants talked about supressing their reactions by attempting to normalise the triggering sound or situation at hand by employing self-talk:

> I have like done a lot of thinking like "Oh my mom is eating and it's keeping her alive and this sound is an indication that she's doing." You know all this self-talk. Uhm, that she's doing something that keeps her body alive. OK, and I do a lot of that. And sometimes that's helpful because then the sound just can. It sometimes can just become something insignificant. (Marissa)

Another common internal coping mechanism was focusing on their mind and body which was present in most of the participants. Marissa, Roni, and Luisa talked about shifting their focus onto not having a violent outburst as an attempt to contain their reactions and maintain self-control. Additionally, Roni was also the only participant who talked specifically about using meditation and breathing exercises as coping strategies whilst being triggered:

> What I used to do was, like I would, I would like stop, breathe, stop breathing and, and I lock my jaw like I just clench my mouth closed. Just so like, to shut everything out. (Roni)

Using mindfulness to cope seems to be correlated with the intensity of the misophonia reaction through time and with the way the aversive reaction affects attention.

Superordinate Theme 4. Levels of attention and concentration

"Can't do it. Can't concentrate": Inability to pay attention

All the participants expressed a strong inability to concentrate or pay attention when triggered. The seventh theme describes what the participants described as a complete inability to direct their attention towards an individual task or stimuli. The coping strategies discussed in the third experiential theme appear to be directly affecting the sufferers' attention. All the participants explained that they directed their attention inwards in an attempt to rationalise the noise or contain their emotional and physiological reaction:

> Absolutely I can't do. I can't concentrate. […] I, I just really can't think of anything but the noise. […] If anyone is talking to me, I have to put so much mental energy into hearing the other, hearing everything else that's happening.
> [Later in the conversation] It's not that I'm focusing so much on the sound. I'm concentrating so much on not having a response that's not kind. That's what it is. (Marissa)

There's a noticeable impairment in attention and concentration for all the participants. The two student participants, Roni and Luisa, explained how misophonia affects their concentration negatively while studying or at class. Both expressed a similar experience of

their attention being "cut off" when a triggering sound appears. Luisa also expressed losing their focus and having to "try and find where I was, again." Luisa went on to say:

> I start thinking like I have to concentrate to stop thinking about the noise. But you start thinking about the noise. And you just, yeah, you just can't ignore it. [...] I just lose the explanation or whatever if I'm reading, I have to read it again and again, it's like. Yes, it's it's just, I can't avoid it, I can't really concentrate. (Luisa)

For all participants, the inability to focus their attention on the presence of a triggering sound seemed to be based on two reasons: thinking about the need to stop thinking about the triggering sound and/or shifting their focus to containing the aversive reaction. All participants stated unanimously that it is impossible to contain their reaction and direct their attention towards a desired stimulus, for example a lecturer during a class.

"I didn't notice you were doing that": Attention absorption on other sounds stimuli

The final theme that was identified relates to exceptions when some of the participants were able to concentrate on a task and not being triggered at first. A few of the participants mentioned times when they were able to stay in a room while a trigger noise was happening. Roni mentioned that meditation and breathing exercises helped her with staying focused in class. While Sandra and Marissa disclosed not noticing their partner eating in the same room as them while concentrating on a particular task; as well as when producing different triggering sounds such as working on a keyboard or with a computer mouse:

> There' been times where if I don't see it and I then I notice he's been eating for 20 minutes. I'm like "I didn't notice you were doing that. That's interesting.", but there was more than likely a sound in the background. Yeah, and then also like. Sometimes if I'm like laying on the ground instead, and like engaging in some kind of artwork or something. (Marissa)

This theme also corelates directly with the internal coping theme *"I have done a lot of thinking"*. Some of the participants shared that since they started practicing mindfulness exercises such as mediation, yoga, or breathing exercises, they have noticed an increase in

exceptions to those triggering situations. However, the participants stressed that more often than not, there has been a background noise from sources such as a radio, a TV, or a crowd.

Discussion

The present study aimed to explore the experiences of people who struggle with misophonia symptoms. The interpretative phenomenological analysis of the interview transcripts revealed eight themes organised into four superordinate themes that correspond with the study's research questions. The results of this study support previous findings from quantitative literature and survey data on how people experience misophonia (Bernstein et al., 2013; Edelstein et al., 2013; Jager et al., 2020; Kumar et al., 2017; Wu et al., 2014).

The first research question aimed to explore the phenomenology of the misophonia reaction. In line with previous findings, psychophysiological responses were similar among all participants. The first emerged theme, *"Brace yourself": Effects on emotions, cognitions, and behaviours* reflects on those reactions and the complex nature of misophonia before, during, and after being triggered. For the sufferers, misophonia brought feelings of irrational anger, irritation, and frustration (Bernstein et al., 2013; Edelstein et al., 2013; Potgieter et al., 2019), but also anxiety about the experience of the misophonia reaction (Wu et al., 2014), as well as the experience of psychological (emotional) pain and fear of acting on their anger. The findings unveil the high intensity of the response and provide a better understanding of how deeply misophonia affects people's mental health. *"I was under so much attack": The aftermath* theme reflects on the adverse outcomes of the chronic experience of misophonia. Participants reported actively seeking stimulus avoiding behaviour. Those findings clearly illustrate how misophonia compromises the ability to engage in daily activities and limits people's interpersonal interactions (Cavanna, 2014). The findings suggest that misophonia produces long-term negative psychological outcomes, such as anxiety, self-forced isolation,

self-harm, and suicidal ideations. In addition, misophonia appears to impact the family and social lives of the sufferers highly, affecting their marriages and relationships with members of their family, friends, and co-workers. There is a clear indication of adverse outcomes on people's mental health, with participants providing a different perspective on findings related to comorbidity. For example, literature suggests that misophonia has high comorbidity with other psychopathological conditions (Erfanian et al., 2019; Quek et al., 2018; Zhou et al., 2017). However, the study's results indicate that misophonia might play an aggravating role in the sufferer's mental health.

In relation to the second research question, participants did not report noticing any identifiable links between their symptoms' severity and life events. However, participants reported an increase in sensitivity to and number of symptoms over time, which were reflected in the *"Becoming more sensitive": Increased sensitivity over time* and *"It gets even worse": Mental and physical susceptibility to triggers* themes, respectively. These results support the findings by Jager et al. (2020) and Natalini et al. (2020) and reflect on the way that misophonia tends to become progressively worse over time. Interestingly, participants reported their sensitivity increasing depending on their mental and physiological conditions; for example, being anxious or experiencing hormonal changes. However, nearly all participants explained their symptoms are worsening with time without a clear indicator of a specific time or an event.

The third research question explored people's coping strategies triggered in academic, work, and everyday settings. The transcripts analysis suggested two general types of coping: internal and external. The *"I have to get away": Avoidant coping* theme refers to external coping strategies. This theme supports previous findings as participants reported they are unable to stay in the same space as the ongoing trigger if they have the option to leave

(Dozier, 2015b; Edelstein et al., 2013; Potgieter et al.,2019; Sanchez & Silva, 2018; Schröder et al., 2013; Schröder et al., 2017; Wu et al., 2014). *"I have done a lot of thinking": Internal Coping* refers to the process of shifting one's attention inwards. The results indicate how participants actively focus on their responses to avoid an outburst by using rationalisation of the sound and/or using meditation and breathing exercises to contain their reaction. These analyses seem to correspond with findings from case studies where patients have been undergoing treatment using CBT and mindfulness techniques (Cecilione et al., 2021; Reid et al., 2016; Schneider & Arch, 2017; Schröder et al., 2017).

The final research question explored whether people with misophonia have impaired attention capacity. All participants reported not being able to pay attention or concentrate in the presence of a trigger; this is represented in the *"Can't do it. Can't concentrate": Inability to pay attention* theme. These findings are congruent with previous research on misophonia suggesting altered attention capacity (Daniels et al., 2020; Frank et al., 2020; Seaborne & Fiorella, 2018; Silva & Sanchez, 2019). All the participants expressed an inability to concentrate on anything but the triggering noise. However, coping mechanisms and attention capacity seem to be inextricably intertwined. Some participants expressed the need to shift their attention inwards to contain their reactions. These findings suggest that people use their attention as an internal coping mechanism. This raises the question of whether people with misophonia struggle with attention control due to an underlying biological condition or whether their inner coping strategy takes over the majority of their cognitive capacity and limits their attention span. The last theme, *"I didn't notice you were doing that": Attention absorption on other sounds stimuli*, represents the state of what Mihaly Csikszentmihalyi calls "the flow of consciousness" – a state of mind where one loses perception of time as they are intensely concentrated on a task (Csikszentmihalyi, 1990). Interestingly, a couple of the

participants reported not being able to be triggered when involved in a captivating activity. However, they reported that it was likely due to the presence of a background noise. Nonetheless, it represents moments in participants' lives when their attention has not been disrupted immediately after the appearance of the triggering noise; an attribute that is a part of the misophonia conceptualisation (Jager et al., 2020). One participant shared being able to stay present and concentrate by practising meditation and breathing exercises. Literature suggests that mindfulness practices can facilitate the experience of intense levels of concentration (Marty-Dugas et al., 2021; Schneider & Arch, 2017). Therefore, these findings may suggest that mindfulness practices can diminish the aversive experience of misophonia.

Limitations and Future Directions

There are some limitations to this study that should be taken under consideration when evaluating its findings. Firstly, the researcher's lack of experience in interviewing could have prevented them from exploring the participants' experiences in detail. Secondly, the study's heterogeneous sample contradicts one of the advisable rules in IPA sampling. According to Noon (2018), a homogeneous sample enables the researcher to explore in-depth individuals who have experienced a particular phenomenon. Additionally, although participants were asked if they had tinnitus, hyperacusis, and/or a condition affecting their attention, conducting in-depth screening for any psychopathological and physiological conditions might have been helpful in fully understanding the participants' experiences. Finally, the interviews were conducted two years after the start of the pandemic due to COVID-19. This should be taken under consideration as it might have affected the participants' experiences but might not have been evident during the interviews.

We contend that a strength of the study is the second author having misophonia. Dealing with the condition for over a decade and various triggers provided them with

knowledge of the misophonia experience, which in turn helped to analytically connect with the subjective experiences reported by the participants.

The current study provides a valuable foundation for future research. Firstly, considering the negative experiences and consequences of misophonia, it is worth exploring how it affects psychosocial development in people and the secondary effects it has on people's mental health. Secondly, susceptibility seems to be influenced by people's mental and emotional states. Therefore, it is worth exploring how personality traits such as neuroticism could influence misophonia progression in life. Furthermore, the connection between internal coping and attention seems of utmost importance. The majority of the sample shared experiencing the need to shift their attention into containing their misophonic reaction. Therefore, it is worth exploring whether the disrupted concentration in triggered people is directly related to misophonia or to a different pathological condition. Lastly, mindfulness practices were reported to positively contribute to the amelioration of the experience of misophonia by reducing aversive reactions. Therefore, in addition to the existing case report on mindfulness and misophonia (Schneider & Arch, 2017), it would be beneficial to thoroughly explore the effects of mindfulness on misophonia reactivity over an extended period using longitudinal qualitative methods, such as diary studies.

Conclusion

To conclude, misophonia is experienced as a real and distressing condition that impacts people's lives and creates a complex set of subjective phenomena and interacting effects on emotions and behaviours, which cause difficulties and distress.

The data in this study confirmed that the misophonic reaction induces strong negative emotions, such as anger, disgust, and frustration, as well as what has been described as emotional pain. The chronic experience of the condition seems to lead to an anticipatory

anxiety response in people who are vigilant for future aversive sounds, further aggravating their mental health. Participants reported impairment in their close relationships, social isolation, and exacerbated symptoms. Moreover, a key finding is a person's diminished capacity to concentrate when triggered. This seems to be directly connected with the coping mechanisms used by a sufferer as the attention is focused on containing the aversive reaction.

This study supports findings from past quantitative research papers and contributes to qualitative literature as the first phenomenological study of people's lived experiences with misophonia. By presenting in-depth accounts of how people subjectively experience misophonia, it provides a valuable addition to the quantitative research and case report research that is growing on the topic. Educating the public about the findings in this paper can potentially benefit the sufferers and those around them by enabling non-sufferers to empathise with the lifeworld of those with misophonia and gain insight into the challenges of living with it.

References

Alekri, J., & Al Saif, F. (2019). Suicidal misophonia: a case report. *Psychiatry and Clinical Psychopharmacology*, *29*(2), 232-237. https://doi.org/10.1080/24750573.2019.1597585

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). https://doi.org/10.1176/appi.books.9780890425596

Berger, R. (2015). Now I see it, now I don't: Researcher's position and reflexivity in qualitative research. *Qualitative Research, 15*(2), 219–234. https://doi.org/10.1177/1468794112468475

Bernstein, R., Angell, K., & Dehle, C. (2013). A brief course of cognitive behavioural therapy for the treatment of misophonia: A case example. *The Cognitive Behaviour Therapist, 6*, E10. https://doi.org/10.1017/S1754470X13000172

Brout, J. J., Edelstein, M., Erfanian, M., Mannino, M., Miller, L. J., Rouw, R., Kumar, S., & Rosenthal, M. Z. (2018). Investigating Misophonia: A Review of the Empirical Literature, Clinical Implications, and a Research Agenda. *Frontiers in Neuroscience, 12*, 36. https://doi.org/10.3389/fnins.2018.00036

Cassiello-Robbins, C., Anand, D., McMahon, K., Brout, J., Kelley, L., & Rosenthal, M. Z. (2021). A preliminary investigation of the association between misophonia and symptoms of psychopathology and personality disorders. *Frontiers in Psychology*, *11*, 3842. https://doi.org/10.3389/fpsyg.2020.519681

Cavanna A. E. (2014). What is misophonia and how can we treat it?. *Expert review of neurotherapeutics*, *14*(4), 357–359. https://doi.org/10.1586/14737175.2014.892418

Cavanna, A. E., & Seri, S. (2015). Misophonia: current perspectives. *Neuropsychiatric Disease and Treatment*, *11*, 2117–2123. https://doi.org/10.2147/NDT.S81438

Cecilione, J. L., Hitti, S. A., & Vrana, S. R. (2021). Treating adolescent misophonia with Cognitive Behavioral Therapy: Considerations for including exposure. *Clinical Case Studies*. https://doi.org/10.1177/15346501211045707

Claiborn, J. M., Dozier, T. H., Hart, S. L., & Lee, J. (2020). Self-Identified Misophonia Phenomenology, Impact, and Clinical Correlates. *Psychological Thought*, *13*(2). https://doi.org/10.37708/psyct.v13i2.454

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. Ebury Publishing

Cusack, S. E., Cash, T. V., & Vrana, S. R. (2018). An examination of the relationship between misophonia, anxiety sensitivity, and obsessive-compulsive symptoms. *Journal of Obsessive-Compulsive and Related Disorders*, *18*, 67-72. https://doi.org/10.1016/j.jocrd.2018.06.004

Daniels, E. C., Rodriguez, A., & Zabelina, D. L. (2020). Severity of misophonia symptoms is associated with worse cognitive control when exposed to misophonia trigger sounds. *PloS ONE*, *15*(1), e0227118. https://doi.org/10.1371/journal.pone.0227118

Dodgson, J. E. (2019). Reflexivity in Qualitative Research. *Journal of Human Lactation, 35*(2), 220–222. https://doi.org/10.1177/0890334419830990

Dozier, T. H. (2015a). Counterconditioning treatment for misophonia. *Clinical Case Studies*, *14*(5), 374-387. https://doi.org/10.1177/1534650114566924

Dozier, T. H. (2015b). Etiology, composition, development and maintenance of misophonia: A Conditioned Aversive Reflex Disorder. *Psychological Thought, 8*(1), 114-129. https://doi.org/10.5964/psyct.v8i1.132

Dozier, T. H., & Morrison, K. L. (2017). Phenomenology of misophonia: Initial physical and emotional responses. *The American Journal of Psychology, 130*(4), 431–438. https://doi.org/10.5406/amerjpsyc.130.4.0431

Edelstein, M., Brang, D., Rouw, R., & Ramachandran, V. S. (2013). Misophonia: physiological investigations and case descriptions. *Frontiers in Human Neuroscience*, *7*, 296. https://doi.org/10.3389/fnhum.2013.00296

Erfanian, M., Kartsonaki, C., & Keshavarz, A. (2019). Misophonia and comorbid psychiatric symptoms: a preliminary study of clinical findings. *Nordic Journal of Psychiatry*, *73*(4-5), 219–228. https://doi.org/10.1080/08039488.2019.1609086

Frank, B., Roszyk, M., Hurley, L., Drejaj, L., & McKay, D. (2020). Inattention in misophonia: Difficulties achieving and maintaining alertness. *Journal of Clinical and Experimental Neuropsychology, 42*(1), 66–75. https://doi.org/10.1080/13803395.2019.1666801

Halcomb, E. J., Gholizadeh, L., DiGiacomo, M., Phillips, J., & Davidson, P. M. (2007). Literature review: considerations in undertaking focus group research with culturally and linguistically diverse groups. *Journal of Clinical Nursing, 16*(6). https://doi.org/10.1111/j.1365-2702.2006.01760.x

Hansen, H. A., Leber, A. B., & Saygin, Z. M. (2021). What sound sources trigger misophonia? Not just chewing and breathing. *Journal of Clinical Psychology*, *77*(11), 2609–2625. https://doi.org/10.1002/jclp.23196

Hefferon, K., & Gil-Rodriguez, E. (2011). Interpretative phenomenological analysis. *The Psychologist, 24*(10), 756–759.

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

Jastreboff P., & Hazell J. (2004). *Tinnitus retraining therapy: Implementing the neurophysiological model.* Cambridge: Cambridge University Press.

https://doi.org/10.1017/CBO9780511544989

Jastreboff, M. M., & Jastreboff, P. J. (2001). Components of decreased sound tolerance: hyperacusis, misophonia, phonophobia. *ITHS News Lett, 2*(5-7), 1-5.

Jastreboff, M. M., & Jastreboff, P. J. (2002). Decreased sound tolerance and tinnitus retraining therapy (TRT). *The Australian and New Zealand Journal of Audiology, 24*(2), 74-84.

Jastreboff, P. J., & Jastreboff, M. M. (2015). Decreased sound tolerance: hyperacusis, misophonia, diplacousis, and polyacousis. *Handbook of Clinical Neurology*, *129*, 375–387. https://doi.org/10.1016/B978-0-444-62630-1.00021-4

Kluckow, H., Telfer, J., & Abraham, S. (2014). Should we screen for misophonia in patients with eating disorders? A report of three cases. *The International Journal of Eating Disorders*, *47*(5), 558–561. https://doi.org/10.1002/eat.22245

Kumar, S., Dheerendra, P., Erfanian, M., Benzaquén, E., Sedley, W., Gander, P. E., ... & Griffiths, T. D. (2021). The motor basis for misophonia. *Journal of Neuroscience*. https://doi.org/10.1523/JNEUROSCI.0261-21.2021

Kumar, S., Tansley-Hancock, O., Sedley, W., Winston, J. S., Callaghan, M. F., Allen, M., Cope, T. E., Gander, P. E., Bamiou, D. E., & Griffiths, T. D. (2017). The Brain Basis for Misophonia. *Current Biology:CB*, *27*(4), 527–533. https://doi.org/10.1016/j.cub.2016.12.048

Marty-Dugas, J., Smith, A. C., & Smilek, D. (2021). Focus on your breath: Can mindfulness facilitate the experience of flow? *Psychology of Consciousness: Theory, Research, and Practice.* Advance online publication. https://doi.org/10.1037/cns0000251

McGuire, J. F., Wu, M. S., & Storch, E. A. (2015). Cognitive-behavioral therapy for 2 youths with misophonia. *The Journal of Clinical Psychiatry*, *76*(5), 573–574.

https://doi.org/10.4088/JCP.14cr09343

Møller, A. R. (2011). Misophonia, phonophobia, and "exploding head" syndrome. In A. R. Møller, B. Langguth, D. De Ridder, & T. Kleinjung (Eds.), *Textbook of tinnitus* (pp. 25–27). Springer Science + Business Media. https://doi.org/10.1007/978-1-60761-145-5_4

Morse, J. M., Barrett, M., Mayan, M., Olson, K., & Spiers, J. (2002). Verification Strategies for Establishing Reliability and Validity in Qualitative Research. *International Journal of Qualitative Methods*, 13–22. https://doi.org/160940690200100202

Muller, D., Khemlani-Patel, S., & Neziroglu, F. (2018). Cognitive-behavioral therapy for an adolescent female presenting with misophonia: a case example. *Clinical Case Studies*, *17*(4), 249-258. https://doi.org/10.1177/1534650118782650

Natalini, E., Dimaggio, G., Varakliotis, T., Fioretti, A., & Eibenstein, A. (2020). Misophonia, maladaptive schemas and personality disorders: a report of three cases. *Journal of Contemporary Psychotherapy*, *50*(1), 29-35. https://doi.org/10.1007/s10879-019-09438-3

Naylor, J., Caimino, C., Scutt, P., Hoare, D. J., & Baguley, D. M. (2021). The prevalence and severity of misophonia in a UK undergraduate medical student population and validation of the Amsterdam misophonia scale. *Psychiatric Quarterly*, *92*(2), 609-619. https://doi.org/10.1007/s11126-020-09825-3

Nizza, I. E., Smith, J. A. (2021*). Essentials of interpretative phenomenological analysis*. United States: American Psychological Association.

Palumbo, D. B., Alsalman, O., De Ridder, D., Song, J. J., & Vanneste, S. (2018). Misophonia and potential underlying mechanisms: A perspective. *Frontiers in Psychology*, *9*, 953. https://doi.org/10.3389/fpsyg.2018.00953

Pietkiewicz, I. & Smith, J.A. (2012). Praktyczny przewodnik interpretacyjnej analizy fenomenologicznej w badaniach jakościowych w psychologii. *Czasopismo Psychologiczne, 18*(2), 361-369.

Potgieter, I., MacDonald, C., Partridge, L., Cima, R., Sheldrake, J., & Hoare, D. J. (2019). Misophonia: A scoping review of research. *Journal of Clinical Psychology*, *75*(7), 1203-1218. https://doi.org/10.1002/jclp.22771

Quek, T. C., Ho, C. S., Choo, C. C., Nguyen, L. H., Tran, B. X., & Ho, R. C. (2018). Misophonia in Singaporean Psychiatric Patients: A Cross-Sectional Study. *International Journal of Environmental Research and Public Health*, *15*(7), 1410. https://doi.org/10.3390/ijerph15071410

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. *Journal of Obsessive-Compulsive and Related Disorders, 10,* 1–9. https://doi.org/10.1016/j.jocrd.2016.04.009

Rinne, T., Särkkä, A., Degerman, A., Schröger, E., & Alho, K. (2006). Two separate mechanisms underlie auditory change detection and involuntary control of attention. *Brain Research*, *1077*(1), 135–143. https://doi.org/10.1016/j.brainres.2006.01.043

Robinson, O. C. (2014). Sampling in interview-based qualitative research: A theoretical and practical guide. *Qualitative Research in Psychology, 11*(1), 25–41. https://doi.org/10.1080/14780887.2013.801543

Roushani, K., & Mehrabizadeh Honarmand, M. (2021). The effectiveness of Cognitive-Behavioral Therapy on anger in female students with misophonia: A Single-Case Study. *Iranian Journal of Medical Sciences*, *46*(1), 61–67.

https://doi.org/10.30476/ijms.2019.82063.

Rouw, R., & Erfanian, M. (2018). A large-scale study of misophonia. *Journal of Clinical Psychology*, *74*(3), 453-479. https://doi.org/10.1002/jclp.22500

San Giorgi, R. (2015). Hyperactivity in amygdala and auditory cortex in misophonia: preliminary results of a functional magnetic resonance imaging study. *Amsterdam Brain Cognition Journal*, *2*, 21-28.

Sanchez, T. G., & Silva, F. (2018). Familial misophonia or selective sound sensitivity syndrome: evidence for autosomal dominant inheritance?. *Brazilian Journal of Otorhinolaryngology*, *84*(5), 553–559. https://doi.org/10.1016/j.bjorl.2017.06.014

Schneider, R. L., & Arch, J. J. (2017). Case study: a novel application of mindfulness-and acceptance-based components to treat misophonia. *Journal of Contextual Behavioral Science*, *6*(2), 221-225. https://doi.org/10.1016/j.jcbs.2017.04.003

Schröder, A. E., Vulink, N. C., van Loon, A. J., & Denys, D. A. (2017). Cognitive behavioral therapy is effective in misophonia: An open trial. *Journal of Affective Disorders*, *217*, 289–294. https://doi.org/10.1016/j.jad.2017.04.017

Seaborne, A., & Fiorella, L. (2018). Effects of background chewing sounds on learning: The role of misophonia sensitivity. *Applied Cognitive Psychology*, *32*(2), 264-269. https://doi.org/10.1002/acp.3387

Schröder, A., van Diepen, R., Mazaheri, A., Petropoulos-Petalas, D., Soto de Amesti, V., Vulink, N., & Denys, D. (2014). Diminished n1 auditory evoked potentials to oddball stimuli in misophonia patients. *Frontiers in Behavioral Neuroscience*, *8*, 123. https://doi.org/10.3389/fnbeh.2014.00123

Schröder, A., van Wingen, G., Eijsker, N., San Giorgi, R., Vulink, N. C., Turbyne, C., & Denys, D. (2019). Misophonia is associated with altered brain activity in the auditory

cortex and salience network. *Scientific Reports*, *9*(1), 7542. https://doi.org/10.1038/s41598-019-44084-8

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

Seaborne, A., & Fiorella, L. (2018). Effects of background chewing sounds on learning: The role of misophonia sensitivity. *Applied Cognitive Psychology*, *32*(2), 264-269. https://doi.org/10.1002/acp.3387

Silva, F., & Sanchez, T. G. (2019). Evaluation of selective attention in patients with misophonia. *Brazilian Journal of Otorhinolaryngology*, *85*(3), 303–309. https://doi.org/10.1016/j.bjorl.2018.02.005

Smith, J. A., & Osborn, M. (2015). Interpretative phenomenological analysis as a useful methodology for research on the lived experience of pain. *British Journal of Pain*, *9*(1), 41–42. https://doi.org/10.1177/2049463714541642

Smith, J. A., Flowers, P., & Larkin, M. (2009). *Interpretative phenomenological analysis: Theory, method and research*. Sage Publications Ltd.

Smith, J. A., Harré, R., & Van Langenhove, L. (1995). Idiography. In J. A. Smith, R. Harré, & L. Van Langenhove, *Rethinking psychology* (pp. 56-69). Sage.

Starman, A. B. (2013). The case study as a type of qualitative research. *Journal of Contemporary Educational Studies/Sodobna Pedagogika*, *64*(1).

Taylor S. (2017). Misophonia: A new mental disorder?. *Medical Hypotheses, 103*, 109–117. https://doi.org/10.1016/j.mehy.2017.05.003

Then, K. L., Rankin, J. A., & Ali, E. (2014). Focus group research: what is it and how can it be used?. *Canadian Journal of Cardiovascular Nursing*, *24*(1), 16–22.

Tight, M. (2017). *Understanding case study research: Small-scale research with meaning*. Sage. https://doi.org/10.4135/9781473920118

Tunç, S., & Başbuğ, H. S. (2017). An extreme physical reaction in misophonia: stop smacking your mouth!. *Psychiatry and Clinical Psychopharmacology*, *27*(4), 416-418. https://doi.org/10.1080/24750573.2017.1354656

Vanaja, C. S., & Abigail, M. S. (2020). Misophonia: An evidence-based case report. *American Journal of Audiology*, *29*(4), 685-690. https://doi.org/10.1044/2020_AJA-19-00111

Veale D. (2006). A compelling desire for deafness. *Journal of Deaf Studies and Deaf Education*, *11*(3), 369–372. https://doi.org/10.1093/deafed/enj043

Yin, R. K. (2009). *Case study research: Design and methods* (Vol. 5). Sage.

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

Yin, R. K. (2009). *Case study research: Design and methods* (Vol. 5). sage.

Zhou, X., Wu, M. S., & Storch, E. A. (2017). Misophonia symptoms among Chinese university students: Incidence, associated impairment, and clinical correlates. *Journal of Obsessive-Compulsive and Related Disorders*, *14*, 7-12. https://doi.org/.1016/j.jocrd.2017.05.

Appendix: Interview Guide

Phenomenology of the misophonia auditory reaction

- Going back in time, can you recall when your symptoms first occurred?
- Have you ever been triggered by just looking at the trigger sound being produced but without hearing it? Would you explain how it feels?
- Tell me in your own word how it feels when something triggers you. What kind of emotions do you experience?
- Tell me what you think about once you're being triggered.
- Will you please explain how you feel physically?
- What is the severity of your reaction? Do you feel you can control it?
- Tell me, before you could name your condition as misophonia, what were you thinking of your reactions when you were triggered?
- How has it affected your day-to-day life and your relationships?

Perceived links between symptoms and life events

- Have you noticed if there's time when you feel more susceptible to triggers?
- Have you noticed a change in your symptoms' severity?

How cope in terms of emotional, cognitive, and behavioural strategies in an educational or work environment

- Tell me about a time when you were triggered in a class, a meeting or with a client, but could not leave the room. How did it feel?
- What was going through your head at that time?
- How did you cope with it?
- How did you feel once you could leave?
- How has misophonia affected your academic and occupational life?

- Has it affected relationships with your colleagues/ co-workers?
- Has it played a role in important decisions such as place of study, work environment or choice of career?
- Have you ever felt that your misophonia has set you back in any way?

Misophonia and impaired attention capacity

- How has misophonia affected your attention?
- Tell me about your level of concentration when there are triggers around you.
- Have you noticed if misophonia has affected your productivity in any way? If yes, how?
- Are there times when you are being able to ignore the trigger and concentrate solely on your task?
- If yes, how do you think you are being able to do that?