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ORIGINAL ARTICLE

Estimation of Prevalence of Misophonia Among High School Students in India

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Abstract

Objective Misophonia, an intriguing psychological disorder is characterized by intense emotional responses to specific sounds produced by others, has gained prominence for its distinct attributes and profound impact on individuals' emotional and psychological well-being. This study addresses the scarcity of research on misophonia's prevalence and severity among high school students, aiming to shed light on the unique challenges faced by this demographic in India.

Methods The study enrolled 597 high school students, including 269 females and 328 males, aged 14 to 16, with no history of psychological or otological problems or medication use. The Misophonia Assessment Questionnaire questionnaire, consisting of 21 questions with a 4-point Likert scale response, assessed emotional and behavioral reactions to sensitive sounds. Participants' scores categorized them as Sub-clinical, Mild, Moderate, or Severe misophonia.

Results The prevalence of misophonia was 34.67% among high school students, with 52.65% categorized as Mild, 45.41% as Moderate, and 1.93% as severe misophonia. A comparison with a similar study on college students in India revealed a higher prevalence of misophonia among high school students. This discrepancy may relate to adolescents' vulnerable psychological states, marked by limited emotional regulation and significant life transitions.

Conclusions This study significantly contributes to the evolving understanding of misophonia by spotlighting its prevalence and severity among high school students in India. The findings underscore the necessity of recognizing and addressing misophonia's impact during adolescence, a crucial developmental phase.

Keywords Prevalence · Misophonia · High school students · Gender · Adolescence

Introduction

Misophonia is an intriguing psychological disorder that has garnered increasing attention due to its unique characteristics and significant impact on individuals' emotional and psychological well-being. Defined as an intense emotional reaction to specific sounds produced by others, such as oral or nasal noises, misophonia triggers pronounced responses to seemingly innocuous sounds like chewing, pen clicking, and dripping water [2].

The concept of misophonia was first introduced by Jastreboff and Jastreboff, highlighting the growing recognition of its significance within auditory and mental health disciplines [7]. In 2013, Amsterdam University Medical Center (Amsterdam UMC) formulated diagnostic criteria for misophonia as a psychiatric disorder [7]. 'Misophonia is a disorder of decreased tolerance to specific sounds or stimuli associated with such sounds. These stimuli, known as "triggers," are experienced as unpleasant or distressing and tend to evoke strong negative emotional, physiological, and behavioral responses that are not seen in most other people. Misophonic responses are not elicited by the loudness of auditory stimuli but rather by the specific pattern or meaning to an individual' (Consensus definition of Misophonia) [13].

The trajectory of misophonia involves a series of emotional stages, from unease triggered by the mere anticipation of sound to escalating feelings of disgust and anger. This progression often leads to losing self-control, significantly impacting functionality and well-being [6]. To assess the severity of misophonia, the Amsterdam Misophonia Scale

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(A-MISO-S) was developed, serving as a valuable instrument in gauging the extent of this disorder [7].

Despite the growing awareness of misophonia, there remains a dearth of research regarding its prevalence and underlying mechanisms. Existing studies primarily focus on retrospective reports from adults, overlooking the adolescent population, even though the age of onset often corresponds to adolescence. A study by Wu analyzed 483 US university students (18–24 years), finding 20% had misophonia [8]. Zhou studied 415 university students in China, revealing a 27.1% prevalence [10]. Another study assessed 336 Dutch students (mean age: 18.9 ± 2.4) with A-MISO-S, identifying a 49.1% prevalence [10]. Indian studies by Patel et al. [9] and Aryal et al. [3] reported a 15.85% to 20% prevalence among college students (18–25 years) with moderate to severe misophonia. In the UK, 772 adults (18–50 years) took a survey including the S-Five questionnaire, estimating an 18% likelihood of misophonia [15].

This study aims to fill this research gap by investigating the prevalence, gender differences, and severity of misophonia in high school students in India. Given the limited information on prevalence of misophonia in adolescents, this research endeavors to shed light on the unique challenges high school students face in India. By employing methodologies such as surveys and established assessment tools, the study intends to contribute valuable insights into the mental well-being of this demographic, potentially informing early identification and intervention strategies.

Method

The number of participants included in the study was 597 high school students with diverse backgrounds. Among 597 students, the number of female students was 269, the mean age was 15 years, the SD = 5, the mean was 15.12, and the male students were 328. The age range of participants was 14 to 16 years. The participants did not have any history or signs and symptoms of psychological or otological problems; neither were under medications. The Misophonia Assessment Questionnaire (MAQ) by Dr. Marsha Johnson, revised by Tom Dozier, 2013 was administered to all the participants. Every student was provided with a copy of the questionnaire. They were instructed to read questions carefully and mark their answers (frequency of problems) in boxes labeled 0,1,2 and 3.

The MAQ questionnaire has 21 questions, with four descriptive options corresponding to the score (0 = not at all, 1 = a little of the time, 2 = a good deal of the time, 3 = almost all the time). The questionnaire was self-administered with the assistance of parents or caregivers. Responses were analyzed, and the participants were grouped based on their scores as Sub-clinical (score < 10), Mild (score 11–21), Moderate (22–42), or Severe (43–63). These questions examine emotional and behavioral reactions towards sensitive sounds. They elicit information about the effects of their sound issues in their daily life or everyday situations. The total scores were calculated, and the severity of misophonia was assigned accordingly. Individuals with mild misophonia were considered at risk for developing its symptoms, and individuals with moderate and above degrees were considered as individuals with misophonia.

Table 1 The results of the prevalence of misophonia across severity for males, females, and total

Misophonia (N)	Males	Females	Total
No Misophonia	214	176	390
Mild Misophonia	62	47	109
Moderate Misophonia	50	44	94
Severe Misophonia	02	02	4
Total	**328**	**269**	**597**

Results

The findings of the study revealed a notable prevalence of misophonia among high school students, with approximately 34.67% of the participants exhibiting symptoms of this disorder. This statistic underscores the substantial presence of misophonia within the high school student population, indicating that the condition is indeed highly prevalent in India. When examining the severity of misophonia across different degrees, it became evident that many participants were affected. Specifically, 52.65% of the students demonstrated a Mild degree of misophonia, signifying that a considerable portion of the sample experienced mild emotional reactions to specific trigger sounds. Additionally, 45.41% of the students exhibited a Moderate degree of misophonia, suggesting that their emotional responses to trigger sounds were more pronounced and distressing. Intriguingly, a small yet noteworthy minority of 1.93% of the students displayed a Severe degree of misophonia, indicating that they were significantly impacted by the emotional and physiological responses elicited by trigger sounds to the extent that could potentially disrupt their daily functioning. The examination of gender differences in misophonia prevalence yielded a notable observation. There was no discernible gender distinction in the prevalence of the disorder among the studied high school students. The results of the prevalence of misophonia across severity for males, females, and total are shown in Table 1.

Discussion

A parallel investigation conducted among college-going students in India offers insightful comparisons to the present study's findings. In that particular study, it was ascertained that the prevalence of misophonia among college students was approximately 15.85%, with a notable manifestation of moderate to severe levels of the disorder [3]. Compared with the current research, a discernible pattern emerges: the prevalence of misophonia is notably higher among high school students compared to their college counterparts in India.

This divergence in prevalence rates could be attributed to a combination of psychosocial and developmental factors unique to the adolescent phase. Adolescents, in particular, undergo a multitude of physiological, psychological, and emotional changes as they transition from childhood to adulthood [11]. This phase is characterized by heightened emotional sensitivity, identity formation, and the establishment of social relationships [1]. This divergence can be attributed to the myriad transformations that students undergo during their adolescent phase, coupled with their limited control over their psychological well-being. These factors contribute to the persistence of symptoms or even an escalation in the severity of misophonia. Students become particularly susceptible within this period of their lives, rendering them more predisposed to various disorders.The inherent vulnerability and limited emotional regulation mechanisms during this period can amplify emotional responses, such as those triggered by misophonic sounds [14].

Moreover, the transitional nature of adolescence encompasses a range of psychosocial challenges, including academic stress, peer pressure, and increased responsibilities, which collectively contribute to an augmented susceptibility to psychological disorders [4, 5]. Within this developmental juncture, individuals might be more predisposed to various disorders, including misophonia. The pronounced impact of misophonia during adolescence could potentially be exacerbated by the challenges of self-identity and self-esteem formation, alongside the heightened emotional reactivity inherent to this stage [1, 12].

Conclusions

This study contributes to the growing body of research dedicated to uncovering the nuances of misophonia. By shedding light on its prevalence and severity among high school students in India, it invites a broader conversation about this condition's emotional and psychological toll during a pivotal phase of life. This phenomenon can be attributed to the transformative nature of adolescence, characterized by heightened emotional responsiveness and a susceptibility to various psychological challenges. Understanding these underlying dynamics can facilitate the development of targeted intervention strategies to mitigate the effects of misophonia during this critical period of development. Moving forward, a more comprehensive approach to understanding misophonia's impact on diverse populations will enable us to develop more effective strategies for early identification, intervention, and, ultimately, improved quality of life for those coping with this disorder.

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Authors' Contribution Palaniandi Rajasekaran Sujeet, was involved in study design, data collection, analysis of the results and writing the manuscript; Rachana Hanji was involved in study design, stimulus preparation, data collection, analysis of the data, interpretation and writing the manuscript; Kritika Nayyar was involved in study design, analysis of the results and writing the manuscript and Prashanth Prabhu, was involved in study design, data collection, analysis of the results and writing the manuscript.

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Declarations

Conflict of Interest The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

Compliance with Ethical Standards In the present study, all the testing procedures were carried out on humans using non-invasive techniques, adhering to the guidelines of the Ethics Approval Committee of the institute. All the procedures were explained to the participants, and informed consent was taken from all the participants of the study.

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