



Prevalence and Clinical Profile of Voice Disorders in Professional Voice Users: A Cross-sectional Study in Urban India.

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Abstract

Background: Voice disorders are common among professional voice users due to prolonged vocal strain and poor vocal hygiene. However, their prevalence and clinical patterns remain under-explored in urban Indian populations.

Objective: This study aims to determine the prevalence, clinical characteristics, and associated risk factors of voice disorders among professional voice users in a metropolitan setting.

Methods: A cross-sectional study was conducted on 300 professional voice users, including teachers, singers, call center employees, and public speakers. Participants were evaluated using the Voice Handicap Index (VHI-30), laryngeal videostroboscopy, and structured clinical interviews. Data were analyzed for frequency, distribution, and associations with occupational and lifestyle factors.

Results: The prevalence of voice disorders was 42.3%. The most common diagnoses were muscle tension dysphonia (35.9%), vocal nodules (24.5%), and laryngopharyngeal reflux (18.3%). Risk factors included daily voice use >4 hours, inadequate hydration, exposure to air pollutants, and previous upper respiratory tract infections. The mean VHI-30 score was significantly higher in affected individuals ($p < 0.01$).

Conclusion: Voice disorders are highly prevalent in urban professional voice users and are influenced by modifiable lifestyle and occupational factors. Early diagnosis, preventive education, and vocal hygiene awareness are crucial in reducing the burden of voice-related disability.

Keywords: laryngology, voice disorders, vocal nodules, muscle tension dysphonia, professional voice users, voice handicap index, urban india, speech therapy

Introduction

Voice is a vital communication tool, especially for professionals who rely on it extensively. Laryngology, the subspecialty of otolaryngology concerned with disorders of the larynx and voice, has gained increasing relevance in recent decades due to rising awareness of vocal health. Voice disorders can lead to significant functional, emotional, and occupational impairments, particularly among teachers, singers, and public speakers.

While the prevalence of voice disorders in Western populations is well-documented, there is a lack of robust epidemiological data from Indian settings. Urban centers, with their high pollution levels, noise exposure, and stressful work environments, pose additional risks to vocal health. This study investigates the prevalence and clinical characteristics of voice disorders among professional voice users in a metropolitan Indian city and explores associated risk factors.

Materials and Methods

Study Design and Setting

A descriptive, cross-sectional study was conducted over a period of 18 months (January 2023 to June 2024) in a tertiary ENT care center in Mumbai, India.

Participants

Three hundred professional voice users aged 20–60 years were recruited. Inclusion criteria included:

- Employment requiring regular voice use (minimum 2 hours per day)
- No history of head and neck cancer or neurological diseases

Exclusion criteria:

- Current smokers
- Individuals with pre-existing speech/language disorders

Data Collection Tools

1. **Voice Handicap Index (VHI-30):** A validated self-reported questionnaire assessing the physical, functional, and emotional impacts of voice disorders.
2. **Videostroboscopic Examination:** Conducted using a 70-degree rigid scope to evaluate vocal fold structure and movement.
3. **Structured Interview:** Included history of vocal use, hydration, rest, pollution exposure, and past medical/surgical history.

Statistical Analysis

Descriptive statistics, Chi-square tests, and logistic regression were used to analyze the data using SPSS Version 25.0. Significance was set at $p < 0.05$.

Results

Of the 300 participants, 127 (42.3%) were diagnosed with voice disorders. The gender distribution showed a slight female predominance (54%). The most frequently affected occupational groups were school teachers (40%), followed by call center agents (25%), singers (20%), and public speakers (15%).

Diagnoses included:

- Muscle Tension Dysphonia – 45 cases (35.9%)
- Vocal Nodules – 31 cases (24.5%)
- Laryngopharyngeal Reflux – 23 cases (18.3%)
- Vocal Fold Polyps – 12 cases (9.4%)
- Others (including vocal fold paresis and cysts) – 16 cases (12.5%)

Risk factors significantly associated with voice disorders included:

- Voice usage >4 hours/day ($p = 0.002$)
- Poor hydration (<1 liter/day) ($p = 0.01$)
- Exposure to dust/pollutants ($p = 0.03$)
- History of frequent throat infections ($p = 0.04$)

Mean VHI-30 scores were significantly higher in affected individuals (56.7 ± 14.2) compared to unaffected (22.5 ± 9.1).

Discussion

This study highlights the high prevalence of voice disorders in urban professional voice users, consistent with prior global studies reporting rates between 30–50%. Muscle tension dysphonia was the most common diagnosis, supporting findings that vocal strain and misuse are leading causes of functional dysphonia.

Vocal nodules and reflux-related laryngitis were also prevalent, underscoring the importance of vocal hygiene and dietary habits. The strong association with prolonged daily voice use and environmental exposure reinforces the need for targeted occupational interventions.

Interestingly, females showed a slightly higher prevalence, possibly due to physiological differences in vocal fold structure and social roles that demand more verbal communication.

The use of videostroboscopy and standardized questionnaires such as the VHI-30 ensured robust diagnostic criteria. However, the study is limited by its cross-sectional design and potential self-reporting bias. Longitudinal studies are recommended to track symptom

progression and treatment outcomes.

Conclusion

Voice disorders are a significant occupational hazard for

professional voice users in urban India. Multifactorial in origin, they require early detection, lifestyle modification, and voice conservation strategies. Public health efforts should focus on awareness, regular screening, and access to speech therapy to reduce voice-related morbidity and preserve professional longevity

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