

Prevalence of vocal discomfort among primary school teachers at selected schools.

Vishal Ghorpade¹ Shilpa Satralkar² Suresh Kumar Ray³ Sudaivi kadam⁴ Swati kurane⁵
Shardul Jadhav⁶ Joice Isapure⁷ Shivam Salunkhe⁸ Mohini Pawar⁹

Affiliation: Bharati Vidyapeeth (Deemed to be University) College of Nursing Sangli

Correspondence author – vishal.ghorpade@bharatividyaapeeth.edu

ABSTRACT

Introduction:

Teachers form the backbone of any educational system, shaping future generations through constant interaction and communication. In the Indian context, where classroom resources are often limited, the teacher's voice becomes the most vital instructional tool. However, prolonged and excessive voice use places teachers at considerable risk of vocal discomfort, presenting as dryness, hoarseness, throat irritation, and voice fatigue. These symptoms not only hinder effective teaching but also affect teachers' well-being, productivity, and overall quality of education. Despite its significance, vocal health remains a largely overlooked occupational concern among school teachers, particularly at the primary level. Recognizing this gap, the present study was undertaken to explore the magnitude of vocal discomfort among primary school teachers.

Material and method

A non-experimental descriptive research design was adopted for the study. A total of 200 primary school teachers from selected schools in the Sangli–Miraj–Kupwad Corporation area were included using a cluster sampling technique. Data was collected using the standardized Vocal Tract Discomfort Scale (VTDS) developed by Mathieson, administered in both Marathi and English for better comprehension. The tool comprised two sections: demographic variables and an 8-item self-rating scale assessing frequency and severity of vocal discomfort symptoms on a 6-point Likert scale. The total score ranged from 0 to 96 and was categorized into no, normal, mild, moderate, and extreme levels of vocal discomfort. Content validity was established by 20 experts, ensuring the tool's appropriateness for the study setting.

Results:

The findings revealed a notable burden of vocal discomfort among teachers. Symptoms such as dryness (46%), aching (43.5%), and soreness (39.5%) were commonly reported, followed by tightness (34%) and burning sensations (31.5%). Overall, most participants experienced mild (65%) to moderate (35%) levels of discomfort. The prevalence of vocal discomfort was found to be 45.56%. Female teachers constituted a larger proportion of the sample, and most participants had 1–10 years of teaching experience, with an average daily teaching duration of 5–6 hours.

Conclusion:

The study highlights that nearly half of the primary school teachers experience some degree of vocal discomfort, underscoring it as a significant occupational health issue. Although vocal discomfort appears to be influenced by demographic and work-related factors, no statistically significant association was observed in this study. These findings emphasize the need for early screening, awareness programs, and preventive voice care strategies to safeguard teachers' vocal health and enhance their professional efficiency.

Keywords:

Vocal Discomfort, Primary School Teachers, Voice Disorders, Occupational Health, Vocal Tract Discomfort Scale, Prevalence Study, Teacher Health, Voice Fatigue.

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Introduction

Teachers face great vocal expectations, as they often instruct in challenging acoustic settings and have limited time for rehearsals. ¹ Consequently, teachers were found to be more susceptible to voice disorders than other professions and occupations.² They have been identified as one of the most important occupational hazards affecting them, which are voice disorders that develop or worsen during their time as teachers and appear as symptoms. ³ Primary school teachers are more susceptible to developing vocal health problems in comparison to secondary school teachers.⁴ They differ in the duration of continuous vocal utilization and in the availability of a chance for voice rest, as well as being usually charged by teaching all subjects. ⁴ Teachers will be asked to complete a self-administered questionnaire. It is mainly based on the design to collect general information about the teacher’s health and to collect more specific information about voice disorders. ⁵

The teachers were asked to provide the following information: personal data (sex, age); vices (alcohol / tobacco / smoking / excessive caffeine); years of teaching experience; duration of daily teaching (per day); and were there any previous consultations regarding vocal discomforts? ⁶

The Vocal Tract Discomfort Scale (VTDS) is created to measure the frequency and intensity of voice treatment-related discomfort symptoms. ⁷ The VTD scale is a self-assessment questionnaire that seeks to identify the perception of discomfort in the vocal tract using eight qualitative descriptors according to the frequency and intensity of symptoms on a scale from 0 (never) to 6 (always). In this questionnaire, the teacher can choose the number that best represents the frequency and intensity of each of the following items: burning in the throat, throat tightness, dry throat, sore throat, itchy throat, sensitive throat, throat irritation, and lump in the throat. The answers to the questions are presented in a Likert scale of six points: never, rarely, a few times, sometimes, often, almost always, and always for the frequency of symptoms; and none, almost none, mild, almost moderate, moderate, strong, and extreme for the intensity of symptoms. To accurately evaluate individuals, it is essential to understand the difficulties associated with mitigating vocal processing discomfort; in particular, symptoms of discomfort can often be a marker of the development of underlying voice disorders. ⁸

Thus, it is necessary to identify through research the prevalence of vocal discomfort among primary school teachers at selected schools of the Sangli, Miraj, Kupwad corporation areas.

Materials and Methods

A non-experimental descriptive research design was

used to assess the prevalence of vocal discomfort among primary school teachers in selected schools of the Sangli–Miraj–Kupwad Corporation area, Maharashtra. A total of 200 teachers were included using an appropriate sampling technique.

Data were collected using the Vocal Tract Discomfort Scale (VTDS) by Mathieson, administered in both Marathi and English. The tool consisted of two parts: demographic data and an 8-item, 6-point Likert scale assessing symptoms such as burning, dryness, tightness, and soreness. Scores ranged from 0 to 96 and were categorized into no, normal, mild, moderate, and severe vocal discomfort.

Content validity was established by 20 experts. Reliability was tested using the split-half method ($r = 0.87$), indicating good reliability. A pilot study on 10% of the sample confirmed the feasibility of the study.

Ethical clearance and institutional permissions were obtained prior to data collection. Written informed consent was taken from all participants, and confidentiality was maintained throughout the study.

Results

The results of the present study are organized and presented in a systematic manner to address the stated objectives. The analysis begins with the description of demographic characteristics of primary school teachers from selected schools of the Sangli–Miraj–Kupwad Corporation area, expressed in terms of frequency and percentage.

Further, the findings related to the prevalence of vocal discomfort among the participants are presented, highlighting the distribution and severity of symptoms as assessed by the Vocal Tract Discomfort Scale.

In addition, the study examines the association between vocal discomfort and selected demographic variables, providing insight into potential influencing factors. The results are presented in the form of tables and figures for better clarity and understanding.

Table No. 1:
Frequency and percentage distribution of the demographic variables.

n = 200					
Sr . No.	Demographic Variable	Frequency	Percentage		
1.	Age	21-30 years	23	11.5%	
		31-40 years	80	40%	
		41-50 years	64	32%	
		51 & Above Years	33	16.5%	

2.	Gender	Female	165	82.5%
		Male	35	17.5%
3.	Vices	Alcohol	0	0%
		Tobacco	1	0.5%
		Smoking	1	0.5%
		Excessive Caffeine Intake	4	2%
4.	Teaching Experience	1 – 10 years	77	38.5%
		11 – 20 years	72	36%
		21 – 30 years	41	20.5%
		31 & ABOVE	10	5%
5.	Duration Of Teaching Hours	1 – 2 hours	9	4.5%
		3 – 4 hours	41	20.5%
		5 – 6 hours	150	75%
6.	Grades	1 st	42	21%
		2 nd	48	24%
		3 rd	61	30.5%
		4 th	49	24.5%
7.	Previous Consultations	Yes	19	9.5%
		No	181	90.5%

Table No. 1 The demographic distribution shows the study participants reveals that a substantial proportion of primary school teachers belonged to the age group of 31–40 years (40%), followed by those aged 41–50 years (32%), while younger teachers aged 21–30 years constituted 11.5% and those aged 51 years and above accounted for 16.5%. The sample was predominantly female (82.5%), with male teachers comprising only 17.5%, indicating a clear female preponderance in primary education.

In terms of lifestyle-related factors, many participants reported no harmful vices, with negligible proportions engaging in tobacco use (0.5%), smoking (0.5%), or excessive caffeine intake (2%), and none reporting alcohol consumption. Regarding professional experience, most teachers had 1–10 years (38.5%) or 11–20 years (36%) of teaching experience, followed by

21–30 years (20.5%) and a smaller proportion with more than 31 years of experience (5%).

The teaching workload appeared substantial, with a majority of teachers (75%) reporting 5–6 hours of teaching per day, indicating prolonged voice usage. Distribution across teaching grades showed that the highest proportion of teachers were engaged in 3rd standard (30.5%), followed by 2nd (24%), 4th (24.5%), and 1st standard (21%). Notably, only 9.5% of teachers had sought prior medical consultation for vocal discomfort, while a vast majority (90.5%) had not, suggesting a lack of awareness or underutilization of healthcare services for voice-related issues.

Table No. 2:
Frequency and percentage distribution of the Vocal Discomfort Frequency of Sensation / Symptom

n = 200				
Sr No	Symptoms	Scale	Frequency	Percentage
1	Burning	Never	121	60.5%
		Sometimes	59	29.5%
		Often	18	9%
		Always	2	1%
2	Tighten	Never	111	55.5%
		Sometimes	67	33.5%
		Often	20	10%
		Always	2	1%
3	Dry	Never	61	33.5%
		Sometimes	98	49%
		Often	26	13%
		Always	9	4.5%
4	Aching	Never	88	44%
		Sometimes	91	45.5%
		Often	15	7.5%
		Always	6	3%
5	Tickling	Never	128	64%
		Sometimes	61	30.5%
		Often	9	4.5%
		Always	2	1%
6	Sore	Never	109	54.5%
		Sometimes	68	34%
		Often	17	8.5%
		Always	6	3%

7	Irritable	Never	107	53.5%
		Sometimes	77	38.5%
		Often	14	7%
		Always	2	1%
8	Lump in the throat	Never	32	66%
		Sometimes	61	30.5%
		Often	5	2.5%
		Always	2	1%

The table no 2 shows that most primary school teachers did not experience frequent vocal discomfort, as a majority reported “never” for symptoms such as burning, tightness, tickling, soreness, and irritability. However, a considerable number of teachers experienced these symptoms occasionally, suggesting the presence of mild or intermittent vocal strain. Among all symptoms, dryness was the most reported, followed by aching of the throat. Symptoms like soreness and irritability were also reported by a moderate proportion of teachers, while burning and tickling were less common. The sensation of a lump in the throat was observed in only a small proportion of participants. Overall, the results highlight that although severe vocal discomfort is less prevalent, mild and occasional vocal problems are common among primary school teachers.

Table no. 3

Frequency and percentage distribution of vocal discomfort Severity of Sensation/ symptoms

n=200				
Sr No	Symptoms	Scale	Frequency	Percentage
1	Burning	None	123	61.5%
		Mild	63	31.5%
		Moderate	13	6.5%
		Extreme	1	0.05%
2	Tightness	None	114	57%
		Mild	68	34%
		Moderate	18	9%
		Extreme	0	0%
3	Dryness	None	74	37%
		Mild	92	46%
		Moderate	29	14.5%
		Extreme	5	2.5%
		None	91	45.5%

4	Aching	Mild	87	43.5%
		Moderate	18	9%
		Extreme	4	2%
5	Tickling	None	128	64%
		Mild	59	29.5%
		Moderate	13	6.5%
		Extreme	0	0%
6	Sore	None	104	52%
		Mild	79	34.5%
		Moderate	12	56%
		Extreme	5	2.5%
7	Irritable	None	111	55.5%
		Mild	75	37.5%
		Moderate	12	6%
		Extreme	2	1%
8	Lump In The Throat	None	134	67%
		Mild	58	29%
		Moderate	7	3.5%
		Extreme	1	0.05%

The above table shows the distribution of vocal discomfort symptoms among primary school teachers. The findings indicate that a majority of teachers reported no symptoms (none) for most parameters, particularly for lump in the throat (67%), tickling (64%), and burning sensation (61.5%). However, a considerable proportion of participants experienced mild levels of discomfort, especially dryness (46%), aching (43.5%), and irritation (37.5%), suggesting the presence of early or low-grade vocal strain.

Among all symptoms, dryness was the most reported, with only 37% reporting no discomfort, while the rest experienced mild to extreme levels. Aching was also notably prevalent, with nearly equal proportions reporting no symptoms (45.5%) and mild discomfort (43.5%). Moderate symptoms were less frequent across all categories, with dryness (14.5%) and tightness (9%) being relatively higher compared to others. Extreme discomfort was rare, reported by only a very small percentage of participants.

Overall, the findings suggest that while severe vocal discomfort is uncommon, a significant number of teachers experience mild to moderate symptoms, indicating a high prevalence of early-stage vocal strain that may require attention and preventive measures.

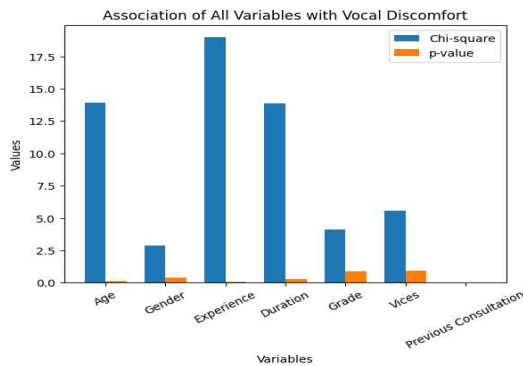


Figure No- 1 Association of vocal discomfort

The present study provides valuable insights into the demographic profile and prevalence of vocal discomfort among primary school teachers in the Sangli–Miraj–Kupwad Corporation area. The findings indicate that the majority of participants belonged to the age group of 31–40 years (40%), followed by 41–50 years (32%), reflecting a predominantly middle-aged teaching workforce. A higher proportion of female teachers (82.5%) was observed, which is consistent with the gender distribution commonly seen in primary education.

In terms of lifestyle-related factors, the prevalence of harmful habits such as smoking, tobacco use, and excessive caffeine intake was minimal, suggesting that occupational factors may play a more prominent role in vocal discomfort than personal habits. The majority of teachers had 1–20 years of teaching experience, indicating sustained exposure to voice use over time. Additionally, a significant proportion of teachers (75%) reported teaching for 5–6 hours daily, highlighting prolonged vocal demand as a potential contributing factor. Notably, only 9.5% of teachers had sought prior consultation for vocal issues, indicating a lack of awareness or under-recognition of vocal health problems.

With respect to vocal discomfort symptoms, the findings reveal that a considerable proportion of teachers experienced mild forms of discomfort across multiple parameters. Dryness (46%) and aching (43.5%) emerged as the most commonly reported symptoms, followed by soreness (39.5%), irritability (37.5%), and tightness (34%). Symptoms such as burning (31.5%), tickling (29.5%), and sensation of a lump in the throat (29%) were also reported, though to a slightly lesser extent. The predominance of mild symptoms suggests the presence of early-stage vocal strain among teachers, likely associated with continuous voice use during teaching activities.

Overall, the findings emphasize that while severe vocal discomfort is relatively uncommon, a substantial proportion of teachers experience mild to moderate symptoms, which may progress if not addressed through timely intervention and preventive strategies.

among primary school teachers with

demographic variables.

The above figure shows the association between selected variables and vocal discomfort using chi-square and p-values. Although some variables such as experience and duration show relatively higher chi-square values, all p-values are greater than 0.05, indicating that none of the variables have a statistically significant association with vocal discomfort among primary school teachers.

Discussion

Conclusion

The study concludes that vocal discomfort is a prevalent occupational concern among primary school teachers in the Sangli–Miraj–Kupwad Corporation area. A significant proportion of teachers experience symptoms such as dryness, aching, soreness, and irritability, predominantly at mild to moderate levels, as assessed by the Vocal Tract Discomfort Scale.

These findings highlight the need for increased awareness regarding vocal health, early identification of symptoms, and implementation of preventive measures such as voice care education, workload management, and regular screening. Addressing these concerns is essential not only for improving teachers' well-being but also for enhancing the overall quality of teaching and learning outcomes.

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