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The Prevalence, Diagnosis, and Management of Voice Disorders in a Single Center Study

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Background: Vocal disorders are challenging medical conditions to research nationally. Vocal disorders are a diverse collection of complaints based on symptoms, unlike other system-based illnesses that have well-defined pathologic, laboratory, or objective diagnostic criteria. No specialized national database or agency is in place to gather information on patients with voice problems. Large-scale epidemiologic studies that examine the prevalence, contributing causes, and available treatments for voice disorders are therefore uncommon. Objectives: This study was done to evaluate the prevalence, diagnosis, and management of voice disorders in a single center study. **Methods:** The cross-sectional study was conducted in the Department of ENT, Prime Medical College Rangpur from June 2021 to May 2022. A total of 60 subjects of both sexes were included in the study. Data were collected by face-to-face interview and analyzed by appropriate computer based programmed software Statistical Package for the Social Sciences (SPSS), version 22. **Results:** In this study, most of the patient 16 (26.6%) lies between 41 years to 50 years and about 38 (63.30%) patients were female and 22 (36.70%) patients were male. About 19 (31.7%) patients had acute condition and 24 (40.0%) had chronic condition. Most of the patients 73.3% had asthma, about 70% patients had respiratory allergy. About 38 (63.3%) had smoking habit and 22 (36.7%) patients were non-smoker. Most of the patients 37 (78.3%) had no family history of voice disorder and 13 (21.6%) had the family history. **Conclusion:** According to the current study, a significant

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proportion of VC patients' diagnostic and treatment programs nationwide are in accordance with established guidelines. To improve care for patients with vocal issues, doctors of various specialties should be aware of these recommendations.

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INTRODUCTION:

The average human life span around the world is increasing. According to estimations made by the World Health Organization (WHO), by 2030, one in six persons on our planet will be 60 years or older, and the proportion of people over 60 years old will nearly double by the year 2050 (2.1 billion), rising to 22% from 12% in 2015 [1].

Vocal disorders are difficult diseases to study on a national basis. Unlike other system-based disorders with clearly defined pathologic, laboratory, or objective diagnostic criteria, vocal disorders are a heterogeneous grouping of symptom-based complaints. There exists no specific national database or national agency to collect data on patients with vocal disorders. As a result, larg epidemiologic studies to address the incidence, risk factors, and treatment for voice disorders are rare.

It is challenging to determine the risk factors that contribute to the development of voice disorders and the features of the complaint(s) that drive patients to seek examination or therapy in the absence of the most basic demographic information about the population seeking treatment for voice disorders. Understanding how patients with voice problems enter the healthcare system and how their care progresses from the initial voice complaint (VC) to diagnosis, referral, and treatment is essential to providing them with the best care possible.

In the largest study to date on the prevalence of vocal abnormalities, more than 1,300 adults in Utah participated in a random phone survey [2]. The risk factors, exposures, and vocal use patterns linked to symptomatic VCs in the general population are thoroughly described in this study. Nevertheless, rather than describing a sizable, diverse, and national population of patients who presented to doctors or speech-language pathologists specifically to treat a voice disorder, the prevalence estimates in this study were obtained by looking for a local patient population, eliciting complaints, and possibly introducing recall bias.

The National Ambulatory Medical Care Survey (NAMCS) is administered by the Center for Disease Control (CDC) as a means to track the diagnosis and treatment of patients presenting to physicians in the outpatient setting. A wide and representative range of primary care and specialty physicians, including otolaryngologists, are administered a detailed survey to record patient demographics, diagnoses, and treatment plans. The survey is national in scope and encompasses all states and the entire range of patient populations and physicians' practices. It is maintained and compiled by the CDC National Center for Health Statistics and has been used to study a wide range of disease systems.

Interest in occupational voice and voice ergonomics has grown over the past few decades. As a result, a number of studies have examined the prevalence of voice disorders in particular voice-dependent occupations. Additionally, a number of papers have examined the prevalence and causes of voice disorders in treatment-seeking groups (ages 6–10) as well as in specific diagnosis groups [3, 4, 5, 6]. and in specific diagnosis groups. Only a few studies have looked into the self-reported prevalence of voice problems in general populations that are not seeking treatment [7,8].

The prevalence of voice disorders in the general, non-treatment seeking population is crucial to know in order to estimate the costs of healthcare interventions or sick leave. The prevalence reported in previous studies ranges from 3.1%17 to 38.5%.18 This variation may be due to variations in methods and in how voice disorders/voice problems are phrased and presented to the respondent.

METHODOLOGY:

The cross-sectional observational study was conducted in the Department of ENT, Prime Medical College Rangpur from June 2021 to May 2022. A total of 60 subjects of both sexes were included in the study. Patients who gave consent to be included in the study. Patients who were not willing to give consent were excluded. Face to face interview was done to collect data with a semi-structured questionnaire. After collection, the data were checked and cleaned, followed by editing, compiling, coding, and categorizing according to the objectives and variable to detect errors and to maintain consistency, relevancy and quality control. Statistical evaluation of the results used to be obtained via the use of a window-based computer software program devised with Statistical Packages for Social Sciences (SPSS-24).

RESULT:

Table I Shows most of the patient 16 (26.6%) lies between 41 years to 50 years

Table I: Distribution of the patients according to age (n = 60)

Age group	Frequency	%
10 – 20 years	6	10.0
21 - 30 years	5	8.3
31 - 40 years	14	23.3
41 - 50 years	16	26.6
51 - 60 years	11	18.3
>60	8	13.3
Total	**60**	**100.0**

This figure shows that most of the patients 38 (63.30%) were female and 22 (36.70%) patients were male.

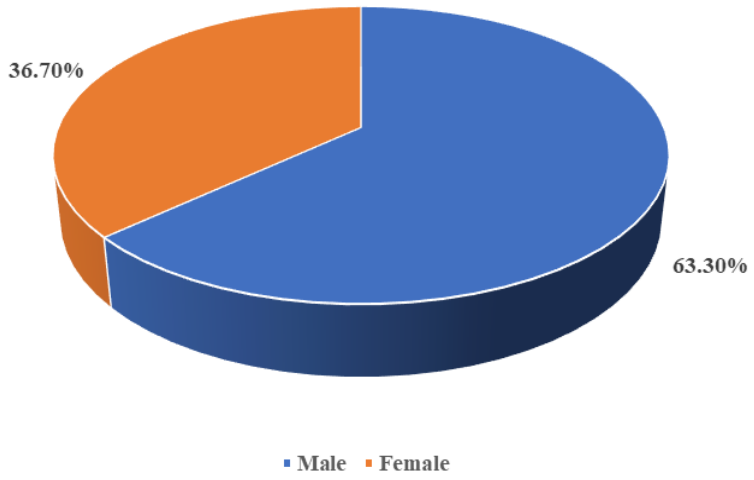

Figure I: Distribution of the patients according to sex (n=60)

Table III Shows 19 (31.7%) patients had acute condition and 24 (40.0%) had chronic condition

Table III: Distribution of the patients according to delay in operation (n = 60)

Acuity of Chief Complaints	Frequency	%
Acute	19	31.7
Chronic, routine	14	23.3
Chronic, flare up	10	16.7
Pre/post-surgery	7	11.7
Preventative care	6	10.0
Unknown	4	6.7
Total	**60**	**100.0**

Figure II shows most of the patients 73.3% had asthma, about 70% patients had respiratory allergy

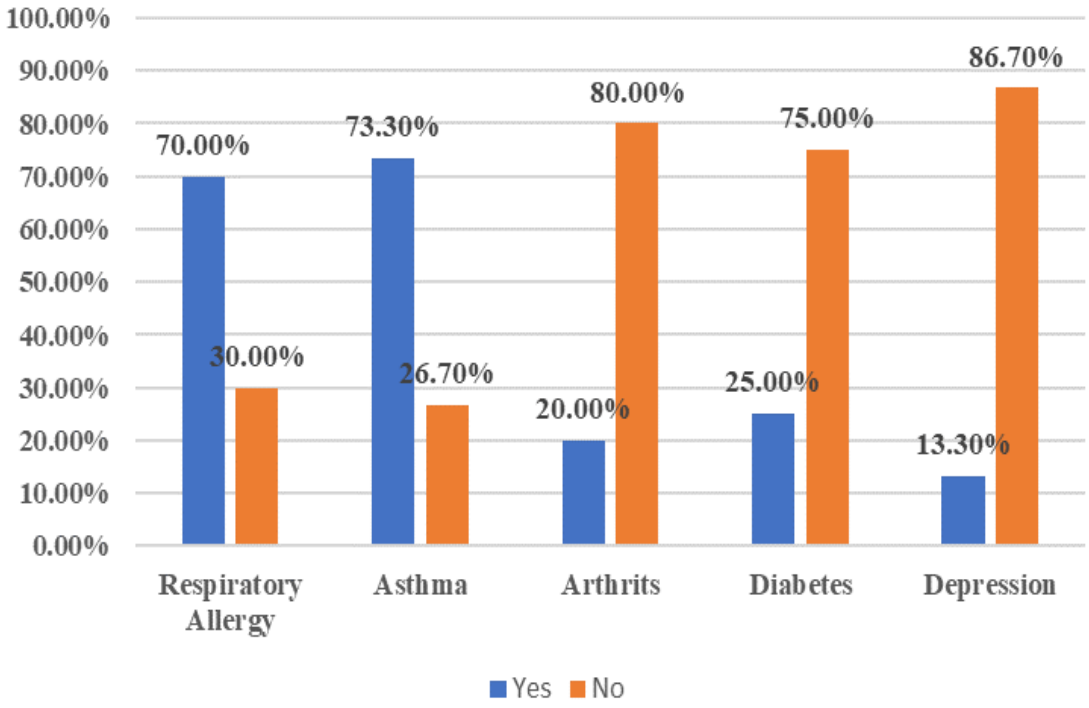

Figure II: Distribution of patients according to the symptoms criteria

Figure III shows that 38 (63.3%) had smoking habit and 22 (36.7%) patients were non-smoker.

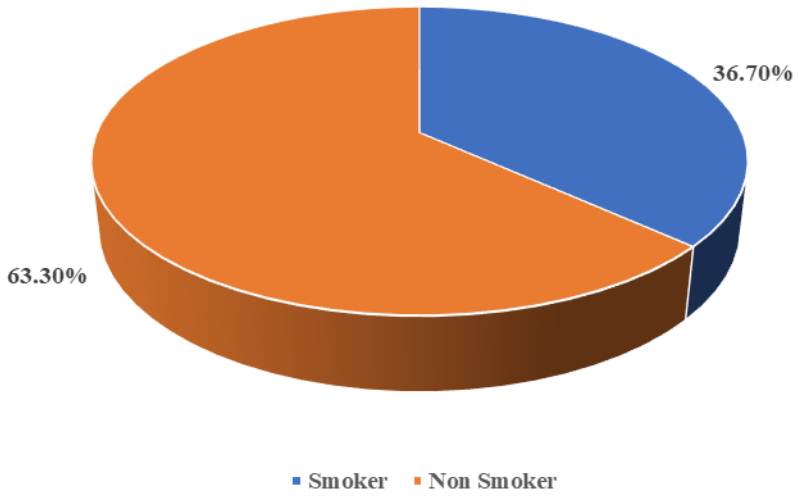

Figure III: Distribution of patients according to Smoking habit (n=60)

Figure IV Shows 37 (78.3%) patients had no family history and 13 (21.6%) had the family history.

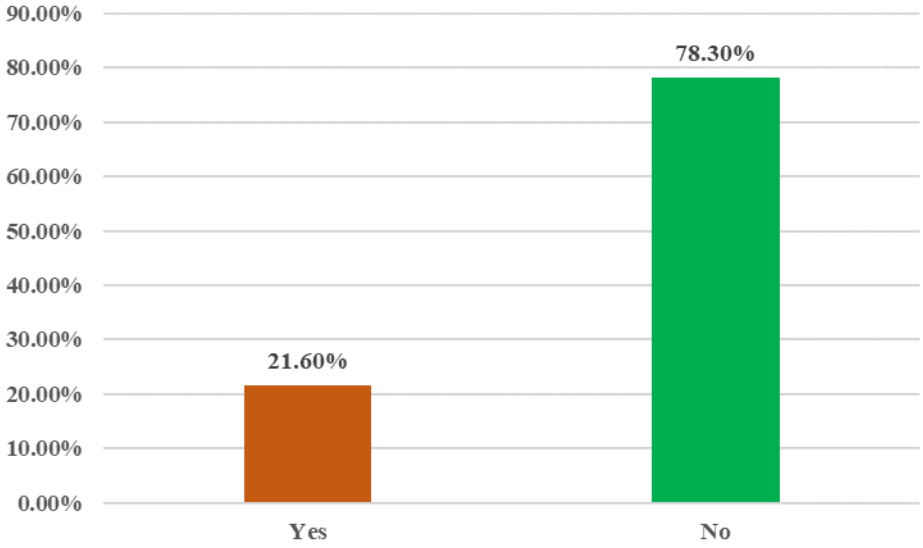

Figure IV: Distribution of the patients according to family history (n = 60)

DISCUSSION:

Voice disorders often have implications for patient's quality of life (QOL) and for the ability to function in social and professional contexts [9]. Even if the public health impact of vocal dysfunction is becoming increasingly recognized, little is known about the prevalence, risk factors, and impact of voice disorders [10]. The number of epidemiological studies reported in international literature is, in fact, scarce. In addition, important methodological differences, such as the sample population and sizes, lead to substantial variability in the estimated prevalence [11].

This Cross-sectional observational study was done in the Department of ENT in Prime Medical College Rangpur from June

2021 to May 2022 to evaluate the prevalence, diagnosis, and management of voice disorders in a single center study. A total of 60 subjects of both sexes were included in the study.

In this study, most of the patient 16 (26.6%) lies between 41 years to 50 years. In another study the highest prevalence (3.5%) was found among the subjects aged 65-84 and 85 years and over (8.3%) [12]. In another study shows the prevalence of voice disorders increased with age, peaked in the age group of 50–59 years and then decreased. The differences between these percentages may partly be attributed to the difference in the demographics of the included subjects in the present study.

In this study about 38 (63.30%) patients were female and 22 (36.70%) patients were male. In another study conducted by Simon R shows that patients with a voice disorder were more likely to be female (P = .002) [13]. In another study women, compared with men, also had a higher prevalence of voice disorders (46.3% vs. 36.9%), $\chi2(1) = 20.9$, $p < .001$, which persisted across the age span.

About 19 (31.7%) patients had acute condition and 24 (40.0%) had chronic condition. In another study nearly 80% of the elicited complaints on the survey were of a duration less than 4 weeks, which if self-resolving may account for a significant portion of the surveyed incidence, as the percentage of ‘‘acute’’ complaints in the NAMCS database was only 50%, defined over the longer duration of 3 months [13]. In another study of the 1,088 individuals (i.e., 43% of the total sample) who reported experiencing a voice disorder during their lifetime, 18.6% had chronic (4 weeks or more) voice disorders and 81.4% had acute (less than 4 weeks) voice disorders [14]. A study conducted by Roy shows among individuals with a voice disorder, women had a higher prevalence of chronic disorders compared with acute disorders (20.9% vs. 13.3%), $\chi2(1) = 8.7$, $p = .003$. This higher prevalence of chronic disorders among women persisted after adjustment of age, CMH = 7.8, p = .005[10].

Most of the patients 73.3% had asthma, about 70% patients had respiratory allergy. In another study the medical comorbidities of patients with and without VC showed that patients with a VC were more likely have to asthma (P = .001) and less likely to have a diagnosis of diabetes (P ¼ .04) or depression (P = .005). Patients with VC had similar reported rates of COPD (P = .20), arthritis (P = .92), cerebrovascular accidents (P = .82), or cancer (P = .47).

In this study about 38 (63.3%) had smoking habit and 22 (36.7%) patients were non-smoker. In another study reported that a tobacco history was recorded by the treating physician for a higher percentage of patients with VCs than those patients without VCs, perhaps reflecting the treating physician’s attention to this portion of the medical history in those patients with a relevant complaint.

In this study most of the patients 37 (78.3%) had no family history of voice disorder and 13 (21.6%) had the family history. In another study the observation that a family history of voice disorders is related to reporting of past voice disorders is an enticing finding worthy of further study. In another study reported by Roy et al., shows the lifetime prevalence of a voice disorder was 30%, with 6.6% of those surveyed indicating they currently had a voice disorder, and 5.9% of patients reporting they had sought professional help regarding their voice. Their report suggests that the prevalence of patients actually presenting to physicians with a VC is much lower.

CONCLUSION:

According to the current study, a significant proportion of VC patients' diagnostic and treatment programs nationwide are in accordance with established guidelines. To improve care for patients with vocal issues,

doctors of various specialties should be aware of these recommendations.

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