

**Development Of Public Education Material In Tamil For  
Professional Voice Users (PVUs) –Teachers, Singers And Radio Jockeys**

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**19SLP027**

A dissertation submitted in part fulfilment of  
Masters of science in Speech Language Pathology  
University of Mysore



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**CERTIFICATE**

This is to certify that this dissertation entitled “*Development of public education material in Tamil for professional voice users – Teachers, Singers and Radio jockeys (RJs)*” is a bonafide work submitted in part fulfillment of degree of Master of Science (Speech – Language Pathology) of the student registration number: 19SLP027. This has been carried out under the guidance of a faculty of this institute and has not been submitted earlier to any other university for the award of any other Diploma or Degree.

Mysuru

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**CERTIFICATE**

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## DECLARATION

This is to certify that this dissertation entitled “*Development of public education material in Tamil for professional voice users – Teachers, Singers and Radio jockeys (RJs)*” is the result of my own study under the guidance of Dr. T. Jayakumar, HOD- Speech and Language Sciences, All India Institute of Speech and Hearing, Mysuru, and has not been submitted earlier to any other University for the reward of any other Diploma or Degree.

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## Abstract

Professional Voice Users (PVUs), refers to the all those individuals who depend on “their voice” to satisfy their professional needs such as teachers, actors, singers and RJs (Stemple, 1993). Occupational/profession related voice usage along with inappropriate vocal behaviours, have high potential to incline an individual towards vocal misuse, abuse and eventually to voice disorders which in turn have a negative impact on their professional and personal life (Hazlett et al., 2011). Thus, there is a high need to create and increase awareness and knowledge among Professional Voice Users, related to vocal health and voice care. This study aims at developing a vocal health related public education material for PVUs with special focus on Teachers, Singers and Radio Jockeys in Tamil language. The Public education material, was formulated based on the literature evidence and knowledge and understanding obtained from the Professional Voice Users belonging to the focus group. Suggestions from the PVUs (three teachers, one from singers and one radio jockey) were incorporated. In addition, suggestions were obtained from a Speech Language Pathologist and Otolaryngologist and incorporated. Finally, spelling, semantic and syntactic appropriateness was verified and ensured by language expert. The linguistically and culturally sensitive public education material, thus developed in this study, for PVUs can be utilized in both prevention and management of voice disorders, among PVUs in general and convergently for Teachers, Singers and Radio Jockeys. The active response received from the PVUs, by means of their valuable suggestions and queries can be considers as the primary success of this study.

***Keywords:* PVUs, Public Education Material, Radio Jockey, Singers, Teachers, Vocal Health, Vocal Hygiene**



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## **Chapter I**

### **Introduction**

Voice being an important and basic component of verbal communication, plays an irreplaceable role in our lives. Voice when combined with language becomes “speech” which is nothing but the verbal form of communication. Together with the language, voice had contributed much to the development of the society and the culture we live in.

When we turn back in time, it can be realized that, starting from the very initial vocal fold vibrations, that enabled our ancestors to voice out the very first, simple syllables for basic communication, as a means of expression of every emotion we possess, such as crying or happiness, as an important source of creating motivation for achieving freedom through public speeches and to every form of entertainment that we spend our weekends today such as movies or music, voice has travelled a very long distance with us.

Apart from being utilised as a tool for expressing our views, needs, emotions and ideas, voice serves as a means of our identity too. By merely hearing a person’s voice alone, a great deal of information such as the gender, approximate age, emotional state of the person can be revealed (Gobl & Ní Chasaide, 2003; Patel et al., 2011).

In addition, there exist a group of people, who are extensively dependent on “voice” for their professional carrier and livelihood. Voice plays a relatively

significant and irreplaceable role in their life. They are called as “Professional Voice Users (PVU)” (Vilkman, 2004).

Our Voice production mechanism, involves complex coordination of fine muscles of the larynx and many systems of our body, such as nervous system and respiratory system. Even a slight deviation in the functioning of these systems or subtle damage to these muscles, affects voice production resulting in voice disorders or voice changes (Lewis & Muckey, 1916; Zhang, 2016).

The consequence of “voice disorders” or “vocal quality changes” is comparatively severe and multifaceted in PVU, who has high dependence on ‘voice’ while at the same time PVUs are more prone to voice disorders as a result of increased vocal demands, than general population (Stemple et al., 1995).

### **Professional voice users (PVU)**

Professional Voice Users (PVU), refers to every individual, such as a singer, teacher, Radio Jockey, a person working in the call centre or a doctor who are dependent on “voice” to any extent, in order, to satisfy their professional needs and demands. Stemple, (1993) defines PVU as those individuals who are directly dependent on vocal communication for their livelihood. Even though every person who is dependent on their “voice” for their professional needs are grouped under the broad term of PVU, there exist internal classification based on the degree of dependency and vocal demands related to their profession (Chitguppi et al., 2018). Kaufman and Isaacson (1991) classification of PVU, differentiates various category of individuals based on voice usage and risk demanded by their profession. Level I include voice users like the singers and actors (elite

vocal performers) for whom even slight vocal difficulty results in serious consequences in their livelihood and profession. Level II includes lecturers, teachers, politicians, public speakers, marketing professionals, radio jockey and telephone operators for whom moderate deviation in voice affects optimal performance in job. Non-vocal professionals are included in Level III, who can perform their job with mild to moderate voice problems such as Lawyers but severe voice problems have significant impact on their profession. Level IV includes non-vocal/nonprofessionals whose livelihood do not get affected due to any degree of dysphonia. Example: laborers, homemakers and clerk. Another classification Vilkman, (2000) differentiated the PVU's based on the vocal quality and load demanded professionally. Actors and singers require both high quality and high load whereas professionals like teachers, RJ's, telephone operators can satisfy their professional needs with moderate quality itself along with high load. Further it can also be appreciated that the "vocal load" is different in teachers and RJ's or telephone operators who are in the same category of professional voice users.

However, the classification put forth by Titze, (1997) classified the jobs based on the vocal load they demand. Group I included singing and acting profession who are vocal performers. singers and actors are also called as vocal athletes due to their capacity to reach high pitch range, loudness and quality. In Group II, included "spoken voice professionals" such as teachers, clerks, lecturers whose occupation necessitates high vocal stamina is regarded as the largest group accommodating many professionals from various job setups. Group III and IV included jobs with tasks (doctors, business executives) and no tasks (clerks etc.) involving voice respectively. Thus, the presence of high heterogenicity and

diversity among the PVU itself, with respect to their professional vocal needs and demands can be appreciated.(Morawska & Niebudek-bogusz, 2017)

It is quite common that the terms “Occupational Voice Users” (OVU) and “Professional voice users” (PVU) are used interchangeably. Even though the individual’s dependence on voice, either for their “profession” or “occupation” signifies the same- the former more predominantly refers to singers and actors while the later points to the rest, wherever “voice” is a pre requisite to their job.(Morawska & Niebudek-bogusz, 2017)

### **Voice disorders and Professional Voice Users**

In present world, it is very clear that, most of the jobs require “good voice” for an employee, as a requirement. Even though, when it is not indicated directly, “a good voice” always remains underneath, as a major intended constituent of good communication skills, which is in turn a pre-requisite for many jobs and professions. Vocal demands necessitated by different profession is variable. However, “heavy vocal demand” has all the potential to incline an individual towards vocal misuse or abuse, which when combined with “poor vocal hygiene” may lead to voice disorders. Presence of abnormality in pitch, loudness or diminishes quality in a person’s voice with respect to the age, gender, cultural background and geographical location indicates the presence of vocal pathology or voice disorder(Morawska & Niebudek-bogusz, 2017; Arosen & Bless, 2009; McFarlane et al 2010; Lee et al, 2004). It is been stated that Professional and occupational voice users are at increased risk of voice disorders than the general population which can be attributed to their nature of work and lifestyle (Stemple et al ,1995) Occupational Voice disorders (OVD), despite having a negative impact over an individual’s ability to earn a living, also significantly affects the quality and efficiency of rendered service, economic and

communicative domains of the organization itself, hereby having an impact on the society (consumers) also. (Hazlett et al., 2011) In countries like Poland, where most comprehensive data related to the incidence of work-related voice disorders are available statistics, voice disorders were likely to be the biggest group of all cases of occupational diseases. (Vilkman, 2004)

Morawska & Niebudek-bogusz, (2017) has classified the major risk factors linked with OVDs as ergonomic or environmental and extra-occupational or individual related factors. Some of the major work place related risk factors (ergonomic) includes work-associated stress, vocal loading, poor working posture, reduced air quality, excessive background noise, dust and poor room acoustics. Individual related (Extra-occupational) risk factors include, vocally inappropriate behaviors in-addition to occupation related voice usage, vocal abuse/ misuse, presence of co-existing conditions/disorders/diseases (including existence of specific allergies inflammatory responses in respiratory pathways, hormonal imbalance or related disorders, acid reflux (GERD) etc.), Personality/anxiety disorders Lifestyle habits (smoking, caffeine, alcohol intake).

It has also been reported that stress, anxiety, tension and other psychological factors also have their contribution in directing an individual towards occupational or professional voice disorders. These psychological factors and voice disorders are mutually related, as a result of the individual steps into a vicious circle in which, psychological factors exaggerate vocal disorder or pathology, and in turn poor voice quality affects the psychological well-being of the individual in a negative way (Kooijman et al., 2007).

Now, it is clearly evident that, the occupational voice disorders have a huge negative impact with the devastating effects operating, not only at the individual level but also at the broader level of the society. On the other hand, it is highly necessary acknowledge the fact that the OVDs are preventable, but only when the possible and prevailing occupation related risk factors, both at the individual and environmental level are addressed appropriately -either by eradicating or reducing the risk factors(Hazlett et al., 2011). Many researchers have indicated that the employment of preventive strategies, aids in reduction of workplace related risk factors (Chan, 1994; Duffy & Hazlett, 2003; Pedersen et al, 2003)

### **Need of the study**

Creating and increasing the awareness about vocal hygiene, vocal health and vocal training are considered as one among the primary preventive strategies (Duffy & Hazlett, 2004). Vocal hygiene in general, involves many components of vocal health such as identification of the abusive vocal patterns or behavior, describing the vocal consequences of those behaviors or patterns, elimination those behaviors while facilitating appropriate behaviors, reflex management and so many others. It is well known that, increased awareness about the principles of vocal care, effective use of voice, preventive strategies and management considerations can be achieved only when, effective “Vocal hygiene education” (VHE) has been rendered to the focus groups, by one or the other means.

VHE in addition to playing a beneficial role in prevention of Voice disorder among high-risk groups, also used as an important component in many treatment programs, especially in individuals with any form of dysphonia (Chan, 1994; Duffy & Hazlett, 2003; Pedersen et al, 2003; Yun et al., 2007 Behrman et al, 2008; Mathur et al., 2015; Bolbol et al, 2016;). Public education materials, lectures, training programs, videos are some of the modalities of vocal hygiene education. Studies have emphasized the need and significance of a tailor made, standardized, structured and formal (in terms of information, content, skill transfer, and language to monitor voicing behaviour) and also socio-culturally relevant vocal hygiene program for PVUs (Nallamuthu et al., 2021; Porcaro et al., 2021).

In order, to address the vocal health of PVUs and in order to obtain maximal-possible outcome, the present study involved development of a customized, focused and socio-culturally relevant (especially linguistically relevant) public education material in Tamil language for Teachers, Singers and RJs.



## Chapter II

### Review Of Literature

Vocal Hygiene Education (VHE) being an important component of the broader concept of “vocal health”, aims to create and increase awareness about functioning of the vocal mechanism, prevention and early management of voice problems or disorders(Pomaville et al., 2020a). Vocal hygiene programs are indicated to individuals with any form of dysphonia or voice changes and thereby considered as an important part of the treatment or management process. Increased vocal demand and vocal load are two major factors which predisposes the Professional or occupational voice users towards voice disorders(Bateman, 1998).

It is well known that, the vocal demands and needs varies among different professional voice users. Singers, for instance exhibit a professional demand for increased voice range, flexibility, higher and minute control over voice. Even a mild change or deviation in voice may have serious consequences on the quality of their life as well as professional carrier. Whereas for teachers and Radio Jockeys “a moderate deviation” in voice affects adequate job performance. On the other hand, unlike Radio Jockeys, teachers are bound to use their voice throughout the day, thus they have high vocal load comparatively. Thus, the VHE programs intended for the specific groups should be in such a way that they address their particular professional demands while practicing vocal hygiene.

VHE as a patient-centered behavioral approach, can take various forms including lectures, training, pamphlets, booklets, videos depending on the community needs and

requirement of the focus groups. However, all VHE programs share certain common components such as information about (A) mechanism of voice production/vocal mechanism;(B) identifying and eliminating inappropriate vocal patterns (vocal misuse/abuse); (C) the negative consequences of vocal misuse / abusive behaviors on voice quality and /or vocal mechanism; (4) the significance/need of adequate hydration; (5) the impact of alcohol abuse, environmental irritants, smoking, and others on vocal mechanism and voice production in particular; and (6) the possible negative impact of Gastro-esophageal reflux (GERD) or laryngopharyngeal reflux and certain medications on the voice (Yun et al., 2007;Behlau & Oliveira, 2009).

The, literature review presented here will predominantly focus on the previous research studies and evidences that investigated and evaluated the status of vocal hygiene awareness in PVU belonging to our focus group, the role, need/ necessity, impact and effectiveness of different forms of VHE among Teachers, Singers and Radio Jockey.

### **Role Of Vocal Hygiene Education (VHE)**

In order to comprehend the background of this study, the ideology behind the choice of prevention and treatment strategies or components of voice disorders within which VHE education is embedded should be understood.

One of the most commonly employed classification of voice therapy approaches given by Stemple (2000) stated that the treatment of any voice disorder revolves within the scope of four major components – they are hygienic, psychogenic, symptomatic and physiological therapy. The Vocal hygiene education program, as referred in the present study, more suitability fits into the “Hygienic therapy” which involves, identification and

elimination of inappropriate vocal patterns or behaviors while preserving the vocal health. Psychogenic therapy focuses on the emotional and psychological aspects of voice disorder. While the Symptomatic therapy majorly relies upon direct modification of vocal symptoms, the Physiological therapy revolves around modifying the underlying physiology function of vocal fold(Ramig & Verdolini, 1998; Divya et al., 2019).

Another major classification involves direct and indirect approaches to voice therapy. Indirect approach is based on the notion that excessive voice usage, vocal misuse, abuse, lack of awareness about vocally inappropriate patterns and behaviors, and individual psychological and stress related factors leads to faulty voice production or usage resulting in voice disorders. Thereby, VHE can be considered to be a part of Indirect Voice therapy, which is contributes to increased awareness, modification and elimination of unhealthy vocal practices that results in damage to the vocal mechanism or adds on to the progression of the voice problem. Direct voice therapy involves a series of techniques and strategies that are aimed at modifying faulty voice production while promoting efficient vocal functioning(Carding, 2000).

Authors have examined the role of VHE in two dimensions – one as preventive strategy and another as a component in treatment and management of voice disorders. The studies indicating the role and effectiveness of VHE alone as a preventive strategy is very minimal and limited(Behlau & Oliveira, 2009). The investigation done by Chan, (1994) has reported that VHE alone can contribute to improved vocal functioning and reduced symptoms. Few other studies have also demonstrated that, VHE program has a positive consequence by improving the participants awareness and knowledge regarding vocal wellbeing, voice care and appropriate vocal behaviors (Bolbol S, Zalat M, 2016; Ramig &

Verdolini, 1998; Scrimgeour K, 2002). It is found that the VHE program developed by Yun YS, Kim MB, (2007) showed successful results, by reduction the vocal polyps, for around 20%-38% of the time. On the other hand, studies have also revealed that, even though VHE resulted in considerable increase in knowledge and awareness, their role in reduction of phono-traumatic behaviors is minimal (Achey M, He M, 2016; Broaddus-Lawrence P, Troele K, 2000).

### **Role And Effectiveness of Vocal Hygiene Education (VHE) Programs Among Teacher**

Teachers, as one of the most important class of PVU- are more predominantly inclined towards acquiring a voice disorder or pathology. “Professional demands” including, the need for continuous loud speaking for excessive amount of time and the occupational conditions such as teaching in a classroom with excessive ambient noise, teaching excessively large number of students in the classroom (required increased loudness and effort), teaching with mask for prolonged time period are some of the situations/ factors that plays a major role in predisposing teachers towards voice disorders. Apart from these factors individual factors such as preexisting conditions, lifestyle and psychological wellbeing also contributes to vocal health. Among other factors, studies have also reported the contribution of “gender” in voice disorders as possible consequence of physiological variations especially in vocal mechanism between males and females (differences in length of the vocal folds, thickness of vocal folds, variations/differences in stress/mechanical) predominantly in anterior third of the vocal fold that result in developing vocal nodules, and histological differences of the vocal folds). In addition to physiological differences, behaviorally it is reported that the female counterparts tend to

vocalize around 10 times more than males in the workplace (Pasa et al., 2007; Boominathan, et al., 2008; Hunter & Titze, 2010; Nallamuthu et al., 2021)

Extensive work and investigation have been carried out, by different authors, among “teachers “as PVU in various dimensions, including the presence of vocal hygiene awareness/knowledge regarding voice care, effectiveness of various voice treatment approaches and strategies, the attitude of teachers regarding voice disorders, treatment seeking behaviors (Chan, 1994; Duffy & Hazlett, 2004; Gillivan-Murphy et al., 2006; Nusseck et al., 2021; Pasa et al., 2007; Porcaro et al., 2021).

This literature review focuses and confines to existing evidences pertaining to the role, effectiveness and impact of VHE in prevention and management of voice disorder among different group of teachers.

A longitudinal study was done by Duffy et al., (2003) to compare and comprehend the outcomes of different voice treatment strategies/ approaches and VHE among 55 teachers who were affected by “Occupational dysphonia” at the University of Ulster, Jordanstown. For the purpose of the study, the participants were randomly assigned to three different groups (23 participants in control group, 20 in the indirect group, and 12 in the direct group). While, to the indirect group, VHE was given in the form of instructions and information’s related to physiology of vocal mechanism, vocally appropriate behaviors and suggestions for life style changes for vocal well-being; the direct group received more focused training related to efficient voice production such as posture training, healthy resonance, vocal projection etc. and control group did not receive any treatment. A relatively comprehensive pre and post treatment assessment `was incorporated in this study, which, included voice quality measurement (using Dysphonia Severity index -DST),

MPT measurement, and perceptual assessment based on two questionnaires (The Vocology Screening Profile -VSP (designed by Hazlett), and the Voice Handicap Index- VHI).

Even though, the results of this ongoing investigation, were not found to be statistically significant, few interesting inferences can be made based on the results of those approaching significant values. The analysis of the findings, in the control group, revealed, a decreased Dysphonia Severity Index (DSI) and self-perceptual rating scores –which is indicative of a deterioration of voice /vocal quality. However, this possible deterioration cannot be attributed to lack of vocal treatment as stated by the authors. Among the participants of the group which received indirect treatment – even though there was a decrease in self-perceptual rating scores, no changes (improvement or deuteriation) were witnessed in acoustic performance assessment, which is reported to a consequence of improved awareness from training. The participants of the direct treatment group, who showed the maximum improvement in acoustic performance assessment, exhibited “no” positive trend in self-perceptual measures, in spite of the presence of a positive trend in improved voice quality. The study also reported the attrition happened in direct group, as a possible consequence of time constraints which may be seen as a major limitation of the study as it affects the equality in participants among different groups. Despite the limitations, the study gives useful and practical insights regarding both direct and indirect treatment approaches in occupational voice users.

Gillivan-Murphy et al., (2006) sought to analyze the effectiveness of a “specific voice treatment approach” among the primary and secondary school teachers, with self-reported preexisting occupation related vocal symptoms and/or vocal quality changes (in Dublin-Ireland). The treatment approach proposed by the authors consisted of

Vocal function exercises (VFE's) in combination with Vocal Hygiene (VH) education (written format in the form of templates). Those participants having preexisting conditions such as neurological issues or those who underwent voice therapy earlier were excluded from the study. A total of 20 female participants (15 primary school teachers and 5 secondary school teachers.), were assigned randomly to treatment and control group for the purpose of this study. The treatment was given for stipulated time period of 8 weeks, before and after which several measurements were taken for the purpose of evaluation including 3 self-reporting questionnaires along with laryngeal endoscopic examination- The Voice-Related Quality of Life (V-RQOL) which assesses a individual's perception of the impact of his/her voice problem/disorder on the quality of life; The Voice Symptom Severity Scale (VoiSS) which is a "30-item" patient-derived inventory of voice/vocal symptoms and The Voice Care Knowledge Visual Analogue Scale (VAS) which was developed by the author, specifically for the present study, is a 5- item tool , intended to measure a individual's current awareness/ knowledge and confidence in voice care, voice production, and voice exercises , as reported in the study .

Results of this study indicated, statistically significant scores in the "voice care knowledge" for the treatment group. The authors thus highlighted that, the proposed treatment approach involving vocal hygiene education (VHE) paired with or in combination with Vocal function exercises (VFE) contributes in reduction of the self-reported vocal symptoms as well as voice care confidence in teachers.

Further, to the amusement, it is also reported that, some of the participants in the "control group" had "vocal nodules" inspite of rating themselves, superior to the treatment group in 3 out of 5 "voice care areas" during baseline assessment. Thereby it is inferred that either

there is no standardized material to which they can refer to or they exist a gap to bridge between education and implementation.

A study was conducted by Pasa et al., (2007) to compare and investigate the effectiveness of “vocal hygiene” training (VHT) program, relative to Vocal Function Exercises (VFE) in prevention of voice related disorders among primary school teachers in Melbourne, Australia. A total of 37 primary school teachers, in the age range of 21 to 55 years with at least full-time 1 year of experience participated in the study. Prior history of consultation with speech Language pathologist or otolaryngologist, smoking and those who underwent voice therapy/training/treatment within a period of 2 years of this study, were considered as exclusion criteria and those participants were excluded from the study. A multi group pretest posttest design was employed by random allocation of the participants to three groups - Group 1 were given VHT, group2 VFE and group 3 control group to understand the relative effectiveness of the approaches.

The pretreatment assessment performed during the initial contact, included self-reported questionnaires related to voice care and measurement of vocal health awareness, maximum phonation frequency range (MPFR) and maximum phonation time (MPT) which is followed by the initiation of group specific pre-determined treatment approaches for a stipulated period of 10 weeks after which post treatment assessment was made. Initially, the participants assigned to the treatment groups (VHT and VFE) received group training for 2 hours, separately based on their treatment. In addition to this, participants in both the groups were given written material and participants of VFE were given a CD containing information given in training for future referral purpose. The second and third session occurred at third and sixth week respectively for a time period of 30 minutes during which



review and progress tracking was done along with active participant discussion. It is to be noted that the assessment was done at 6 weeks as well as 10weeks post initiation of treatment. The VHT included topics like basics related to anatomy and physiology of vocal mechanism, causes, symptoms, signs related to vocal pathologies /voice disorders and also general management and preventive strategies, while four exercises -, stretching, warm-up, contracting, and adductor strengthening exercises were mainly constituted, the VFE.

On the other hand, the control group completed the same questionnaires and participated in the same voice production tasks as the participants in the experimental groups. While the treatment groups were administered with questionnaire exploring the perceived benefit of the two prevention programs, the same was not applicable to the control group. During the period of the study the researchers, met the participants in the treatment group four times while met the control group three times. Results revealed enhanced voice characteristics and improvement in vocal knowledge among the participants in both the treatment groups while deterioration in most of the variables were seen in the control group (increase in vocal symptoms and decrease in MPT). Further, analysis of the results indicated the presence of relatively increased improvement among participants in VHT group than VFE group. Eventhough, this study had certain limitations with regard to the limited sample and unequal participants across the group, the study emphasizes the role of Vocal hygiene awareness in preventive voice care as stated by the authors.

Vetter (2016) surveyed, the knowledge and awareness among collegiate students, about anatomy, physiology of voice mechanism/production and vocal hygiene related issues, based on a questionnaire. The survey involved Sixty-two participants, including 35

females and 27 males, who are students enrolled in voice lessons at either graduate, undergraduate, master's or doctoral-level, based from the University of Kentucky Opera Theater Department. Their age range was 18 to 28 years with a median age of 20.5. It was stated that, at the college level or above, the number of semesters of voice lessons ranged from 1 to over 7, with a median of 3. The questionnaire utilized in this study, consisted of 3 parts in which Part A dealing with demographic details; Part B about vocal anatomy and physiology and Part C about voice care. The questions of Part B and C had multiple choices for the participant to choose from. The analysis was made by, comparison of the participant's scores who had taken pedagogy class with the scores of participants, who had not taken the class and also with respect to the levels of education (undergraduate, master's, doctoral).

Results of this study emphasizes the importance of increasing the awareness about vocal mechanism and vocal hygiene in professional voice users including teachers working under various setups. The finer analysis of the results, revealed that, the graduate students scored more (in terms of more correct answers to questions) in Part B (dealing with anatomy and physiology) than undergraduate students. However, no significant difference was found with respect to levels of education in the Part C (concerned about vocal Hygiene). The authors concluded that "pedagogy courses should be devoted to speaking habits, anatomy and physiology, reflux, medical management, and how these contribute to or detract from efficient voice use" (Vetter, 2016, p. 47)

Porcaro et al., (2021) evaluated the impact and effect of "vocal hygiene education" on willingness to modify vocal behaviors among teachers. The study was based on, 26 full time teachers (including with 25 females and 1 male participant) from preschool

to high school, with their age ranging between 21 to 59 years. In-between pre training and post training survey, “one hour training” on vocally hygienic practices, which included basic information and overview on structure and functioning of the vocal system, vocally appropriate and inappropriate behaviors and the consequences of phono trauma, and positive effects of employment of vocal hygiene techniques and practices.

Results revealed, the presence of “positive impact” of the training on vocally hygienic practices, on teacher’s willingness to incorporate vocally hygienic behaviors in the repertoire (statistically significant). Further, by virtue of vocal hygiene training, an increase in, perceived desire to engage in vocal hygiene behaviors among the study participants, was manifested in nearly around 90% of the targeted vocal hygiene behaviors.

The study thus established that, public education on healthy vocal usage and vocal hygiene had a great impact on teachers, thereby, encouraging them to actively employ and incorporate these techniques into their repertoires.

A recent study was conducted by Nallamuthu et al., (2021) to investigate and understand the impact and outcome of Vocal hygiene program, in facilitating the vocal health, among female school teachers. Seventeen school teachers (11 primary grade, 5 high school and one higher secondary school teachers) from Chennai, Tamil Nadu within the age range of 28 to 45 years, who were engaged in, active teaching with a minimum voice usage of 4 hours per day were recruited for the study over a period of one year at different time points. An interesting aspect of the study is that, “a comprehensive pre and post-test assessment consisting of perceptual, instrumental analysis along with visual examination and was recruited to comprehend the impact of VHP. Clinical voice measurement for pre and post – test comparison included GRABAS, MPT and s/z ratio while instrumental

measures consisted of acoustic analysis (using Ling Waves Phonetogram Pro and signal analysis module -Version 2.4) and stroboscopic visual examination. In addition, “Sri Ramachandra vocal health questionnaire for teachers” and two other self-perceptual vocal measures (V- DOP and VFI) were also employed for obtaining a detailed picture of every impact of VHE.

The vocal hygiene program developed for the purpose of the study consisted of power point slides-as a form of clinician administered module, supported by animations with relevance to Indian context in Tamil and English language. The VHP module was validated by two Speech language pathologist and one Otolaryngologist as stated by in the study. It is also reported to be a one-hour session (face – to -face) of VHP where in the participants were given ample opportunities to raise their doubts and questions. As another special add-on to the VHP “a check list “to ensure about following VHP was given in which the participants were asked to put a tick mark every day and also to document the reason whenever they failed to follow VHP. Also, weekly phone calls were done by the authors for regular follow-up with participants -which can indirectly contribute in sustaining motivation levels of the participants and consistency. Pre-treatment assessment was done before VHP and post treatment assessment was performed after four weeks of VHP.

Results obtained by comparison of pre and post VHP assessments indicated the positive role played by VHP by means of relative improvement obtained in post-VHP assessment. Analysis of the results indicated significant decrease in vocal ad no-vocal practices post treatment assessment. Even though perceptually limited improvement was observed, improvement in vocal symptoms such as reduction in, heart burn sensation ( $P = 0.031$ ), feeling of discomfort around the throat ( $P = 0.008$ ), limited breath control while

speaking ( $P = 0.016$ ) were reported. However, no significant difference was noticed in MPT & s/z ratio. Other areas in which, desirable changes were witnessed ,includes improvement in frequency range ( $P = 0.004$ ), low I0 ( $P = 0.044$ ), shimmer ( $P = 0.017$ ), DSI ( $P = 0.013$ ) and all parameters of stroboscopic evaluation excluding the nonvibratory portion & ventricular fold hyper-adduction) showed positive outcome.in addition , positive changes were obtained in the overall severity ( $P = 0.002$ ), physical ( $P = 0.003$ ) and functional domain ( $P = 0.034$ ) of V-DOP scores along with considerable improvement in VFI after a period of voice rest ( $P = 0.048$ ).

The authors concluded, by highlighting the facilitatory action of VHP in increasing the awareness among teachers related to vocally inappropriate or at-risk phono-traumatic behaviors and vocal hygiene and health. Even though, considerable improvement was seen in reduction of certain vocal symptoms, the efficiency of VHP in producing physiological improvement in teacher's voice was limited. Another inference, pertaining to an important factor to be projected from this study, that might have contributed in obtaining desirable outcome, is the, development and use of social-cultural and language sensitive VHP.

### **Role and effectiveness of VHE Programs among Radio Professionals**

Radio jockeys/professionals, like teachers are classified in the level II of professional voice users who are in the moderate risk of developing a voice problem\_(Divya et al et.al.,2019). Unlike teachers, while “Voice” serves as the primary index of identity for Radio jockeys, the vocal load demanded by their profession is relatively less.

There exist ample evidences indicating, the presence of variability among RJs with respect to their type of work, duration of voice usage, vocal load and also the prevailing

conditions of the work environment. Even though the professional duties and job carrier of Radio professionals are not highly sensitive to voice disorders or problems like singers or actors- significant or moderate voice problems / disorders can Impose a threat to the quality of service rendered by them.

The literature evidence pertaining to the role, impact and outcomes of VHE on radio jockeys or radio professionals is found to be very limited, which can be perceived as an indicator for comparatively reduced importance and consideration given to the RJs, as professional voice users.

Timmermans et al. (2003) investigated the awareness about vocal hygiene among two groups of Radio Jockeys (RJs), based on a self-reporting questionnaire who clearly differed in age and in experience. The study involved 27 radio students (15 male;12 female) having no radio experience who are future professional voice users with a mean age of 22 years and 53 radio professionals (33 males;20 females) having experience ranged from 2 to 32 years with a mean age of 41 years. The Radio Professionals were selected from Rits, a school for audiovisual communication, and employees of Flemish Radio and Television. The results indicated the presence of distinctive vocal profile in each group. In radio professionals the intake of coffee was significantly higher and vocal fatigue was significantly high. On the other hand, the radio students, experienced more acid reflux problems and reported significantly more hoarseness. Smoking was significantly high in both the groups (Radio students: 33%; radio professionals: 28%). This study, thus didn't support the hypothesis put forth by researchers that radio professionals would have better vocal hygiene than radio students, thereby, exhibits the significance of a vocal hygiene education program for both future and professional voice users.in addition it is also

revealed that the lack of awareness about vocal hygiene and presence of underestimation about the negative consequences of bad oral health.

Divya et al. (2019) administered a questionnaire to quantify the vocal, non-vocal habits and voice usage to 38 professional Radio Jockeys based on direct interview from their working stations. The study included both male and female RJs with a mean age of 19 to 40 years. The participants were divided into two groups based on the years of professional experience. Group A had 20 participants with one year of experience in this field (Student RJs) while Group B contained 18 participants, those with more than 1 year of experience (Professional RJs).

The questionnaire was divided into three parts – PART A provides insight to the non-vocal habits; PART B deals with vocal habits and PART C quantifies the self-perception of voice and the possibility of getting a voice disorder and the preventive strategies that the radio jockeys are aware.

Comparison was made between years of experience of RJs and their vocal and non-vocal habits. Results of this study revealed that even more than one-year experienced RJs have lack of awareness about the ill effects of intake of caffeine, chewing tobacco, intake of spicy food (non -vocal habits); excessive or induced throat clearing, coughing, speaking in noisy environment (vocal habits). However professional RJs had awareness about Hydration, diet modifications and about allergic reactions. It is also found that alcohol consumption, intake of spicy foods, speaking in noisy environment and throat clearing was less in professional RJs than the student RJs.

The authors concluded by stressing the importance of Vocal hygiene awareness program, especially during their training period among the radio jockeys, in order to prevent voice disorders and vocal quality changes

Balasubramanian et al. (2020) focused on developing a “vocal hygiene program” for Information Technology Enabled Service (ITES) professionals. These professionals are equally at risk for voice disorders or voice quality changes due to their work demand and nature of work including inappropriate posture, static muscular load, disturbed air quality etc. ITES professionals more suitably fall in the level II of Koufmann and Isaacson (1991), classification of PVU for whom even moderate vocal difficulty would prevent adequate job performance.

The Vocal Hygiene program developed by the authors consisted of, “a handout” with specific Do’s and Don’ts, warm- up and cool-down exercises and other relaxation exercises with instructions along with demonstration based on the vocal and non-vocal habits in accordance with the nature of their work and literature evidence. Further, the role and effect of each component in the developed vocal hygiene program were explained to the participants to ensure that they carry only practical expectations of the outcome. The researches also, evaluated the effectiveness of the developed Vocal Hygiene Program using pre and post implementation questionnaires. A total of 31 participants, both male (13) and female (18) in the age of 19 years to 35 years with an experience of 3 months to 3 years in ITES field were involved in the study.

The pre implementation base line was taken through standardized self-rating questionnaires- Voice Handicap Index (VHI) and Vocal Fatigue Index (VFI-2) along with a direct interview to get information about their nature of work, the impact of the work on



their personal and social life, difficulties experienced in the job with respect to voice usage, general health and emotional health.

The participants were then advised to follow the developed vocal hygiene program for a period of 2 weeks after which, post implementation questionnaire was administered. During the stipulated period, the participants were closely monitored with the help of the team leaders and certain guidelines and restrictions such as reduction in the number of coffees supplied to an individual per day intake, carbonated drinks etc.

Results indicated a very good positive progression in a short period of time emphasizing the efficiency of the vocal hygiene program implemented in these participants of ITES profession. Thereby emphasizing the importance of vocal hygiene awareness in prevention of voice problems, reducing the symptoms and improving quality of life.

### **Role and Effectiveness of Vocal Hygiene Education Programs among Singers**

As we think, “the singers “who are considered as elite vocal performers can’t be simply grouped as a homogeneous group rather the term “singer” includes spectrum of people, from wide range of set ups and backgrounds- may be a well-trained Carnatic singer who does only concerts throughout the year or takes music classes every day, may be a light music singer or a playback singer or a stage singer or a singer our of passion and also as a teacher of music in schools. One thing that remains infinitely constant among all singers, inspite of their nature of work is the need for “fine usage of voice “and even a very slight deviation in the “quality “of their voice have a major impact on the professional and personal life.

Their professional demand includes, ability to have fine control over voice, increased range and high quality of voice. These high demands when combined with poor ambient environment for vocal health and lack of knowledge about voice care may lead to vocal misuse and abuse and ultimately result in voice disorders. Thus, leaving them at greater risk for developing voice disorders or progression of vocal symptoms and damage. (Sapir S, Mathers-Schmidt B, 1996; Pomaville et al., 2020) There exists a well-known assumption that “trained singers” innately have high conscious about their voice, thus are innately inclined towards vocally appropriate behaviors and also have adequate knowledge about the need of early treatment in case of voice disorders or vocal changes.

However, it is quite surprising that the investigations and studies done by few authors, did not completely support the above notion, while indicating mixed findings.

A survey was done by Sapir et al., (1996) to investigate the presence sensitivity related to vocal health among singers and non-singers based on a questionnaire. The study involved 70 singers and 89 non-singers as participants. The results of the study indicated that singers exhibited relatively increased sensitivity to vocal health and voice care than non-singers. This finding can be taken as an indicator to the existence of increased awareness and knowledge among singers acquired either through training (VHE) or through experience, which made them relatively more sensitive. It can be inferred that VHE serves as an effective component towards prevention and treatment of voice disorders.

On the contrary, a survey done to determine the effectiveness and role of VH on vocal behaviors and perceptual voice characteristics extended relatively reduced support to previous findings. The study was conducted by Broaddus-Lawrence P, Troele K, (2000) among eleven (3 men and 8 women) untrained singers who received less than 2 years

of formal training in the age range of 18 to 22 years. VHE was given in the form of 1 hour class training consisting of information about vocal anatomy and physiology, voice care etc., before and after which surveys were conducted which include areas such as perception of their singing and speaking voice, vocal abusive practices. Even though the participants reported an increased benefit and learning, the results indicated, only minimal or limited changes in vocal hygiene behaviors and perceptual voice characteristics.

A study done by Yiu EM, (2003) among 20 Amateur karaoke singers indicated that the role of Vocal rest and hydration in prevention of occurrence and progression of voice disorders is highly essential. At this point, it is necessary to recall that voice rest and hydration are two important components of any vocal hygiene program. Every VHE, definitely incorporates these components. This study thus indirectly emphasizes the significance of VHE.

A survey done by Boominathan et al., (2008) among different level of professional voice users, which included 100 Indian singers (54 male 46 female singers) based on a self-reporting questionnaire revealed that over 59% of the singers had voice problems in which around 70% of the population reported that they either consult, only after a week of onset of vocal problems or never sought help. This study based on Indian population may be considered as an indicator that reflects the attitude and motivation of singers, in seeking appropriate treatment when there exists a general assumption about their increased sensitivity and level of training towards vocal problems.

Another study done by Gilman et al., 2009 focused on identification of perceptions and barriers among 78 contemporary commercial music performers in seeking vocal care support. The study was based on, responses obtained through a self-reporting

questionnaire from the participants at a conference on professional commercial music, at Atlanta in the year 2006. The age range of the participants was from 19 to 59 years. the questionnaire probed several areas including “apprehension about seeking voice care from a physician specialist, voice coach, or speech language pathologist; fear about what might be found on examination;” (p-225). Analysis of the results indicated that even though 82% of the participants considered voice as a significant part of their profession, around 41% indicated that they are not likely to seek medical support for problems or disturbances related to voice. This study clearly indicates the need of public education program in order to create and improve he awareness about voice disorders.

Braun-Janzen & Zeine,(2009) investigated the presence of interest and knowledge, among singers, in areas related to the voice mechanism, vocal hygiene and also the awareness about role of Speech Language Pathologist (SLP) in voice care, based on a nine-part questionnaire. A total of 129 singers, including both professional and armature singers, from around six singing groups, based at Vancouver and the Fraser Valley (British Columbia) participated in the survey. An interesting component of this survey is that, at the end of the questionnaire answer keys were given (such as vocally appropriate behaviors), intended to result in immediate learning opportunity. Results indicated the presence of increased interest and perceived knowledge with respect to vocal mechanism -anatomy physiology, vocal hygiene and pathology in participants with professional experience when compared to armatures. On the other side professionals only had higher levels of “interest” and not knowledge about the role of SLP in voice care. Apart from prevention, this lack of knowledge has high potential to delay or prevent the treatment process, thereby, leading to progression of the condition or even permanent damage to

voice. The findings strongly support the need to create proper awareness not only about vocal hygiene but also about the treatment process.

Based on this study, similar survey was conducted by Kwak et al. (2014) which focused on analyzing the differences in knowledge (in terms of basic structure and functioning of the voice production mechanism, vocal pathology) and experience in addition to anxiety and fear associated with visiting Otolaryngologist and SLPs. An eighty-item questionnaire was adapted from Braun-Janzen & Zeine. (2009) for the propose of this study. A total of 110 singers, including doctoral/young artist (25), master's (35) and undergraduate (50) singers, across varied levels of training, from elite conservatories and young artist programs, in the United States participated in this survey. Responses obtained from the participants, over the period of August and September 2012 were analyzed to estimate the associations between baseline participant characteristics and test scores based on a “general linear model”.

Analysis of the results indicated, no significant difference between levels of training, with respect to the presence of “anxiety” in relation to vocal pathology, scope examinations, or visits to a speech pathologist and in self-reported knowledge except the doctoral level singers who exhibited relatively higher anxiety levels. All the three levels of singers reported interest in knowing more about the structure and function of voice production mechanism, speech pathology, care and hygiene of the vocal mechanism, and about vocal disorders.

This study can be viewed as a “key” that directs us to the understanding about, the presence of interests, in all levels of singers, to expand their knowledge about the vocal mechanism, pathologies and about treatment process while, at the same time, there exists

“absence” of significant difference in knowledge in advanced singers relative to other levels of singers. This study thus signifies the immediate need of public education program related to vocal health for PVU. In addition to it, surprising discovery of this survey is that, even advanced singers are anxious about seeking professional help (Otolaryngologist/SLP) for vocal issues.

In Indian context, a cross sectional study was done by Gunjawate et.al (2016) among 55 self-identified Indian Classical singers to understand about their attitude towards seeking vocal health care. A 10-point self-reporting questionnaire, containing 10 questions each of which to be rated on a 5-point Likert Scale, was adapted from Gilman et al., 2009 for the purpose of this study. Multiple areas were probed by the questionnaire including, likelihood of seeking aid for general health concerns and voice care, anxiety associated with seeking advice from singing teacher/voice coach/ therapist for voice-related problems and also about undergoing transoral or trans nasal laryngeal examination. In addition to this, their awareness about the profession of Speech Language Pathology (SLP) was prompted using a binary choice (yes or no) question.

Analysis of the responses revealed shocking results, that even though 78.2% of the singers were likely to consult a doctor for health-related concerns, a majority of 81.8% indicated that they were less likely to seek medical assistance for voice care related issues. Further it is found that only 23.6% of the singers were aware about the profession of SLP. The findings of this survey, were thus in synchrony with previously discussed western literature. Thus, the authors, concluded by stressing need and the presence of responsibility over SLPs in creating awareness about their role and contribution in voice care.

Few authors have investigated the role of VHE in different categories of singers. However, in general, the literature evidences indicating the effectiveness of VHE in singers are relatively limited.

A recent study, by Pomaville et al., (2020) investigated the impact of VHE in improving the knowledge about voice care, vocal hygiene and the consequence of VHE in reducing the at-risk vocal behaviors based on pre and posttest questionnaire. The study included 20 vocal performers including 4 males and 16 female who were older than 18 years of age, all of whom can speak and understand English language. No prior history of speech therapy enrolment was considered as an inclusion criterion. The term vocal performers indicated in the study refers to individuals involved in the performing arts (drama or singing), including both students and other members of the community at large. The questionnaire was developed by an interdisciplinary team consisting of a speech-language pathologist and two professors of music at the university of California and Fresno City college. The questionnaire was in turn refined over the course of two pilot studies. While the knowledge-based questions consisted of multiple-choice, matching and open-ended questions, the behavior inventory consisted of A Likert scale like format where in the participants had to choose from set of options. The questionnaire probed, two primary areas – knowledge of voice care and vocal health; the self-reported at-risk vocal behaviors.

The questionnaire was administered in online mode before and after the VHE program. The VHE program was delivered in the form of lecture for 2-3 hours which covered several areas including structure and function of the larynx, identification and elimination of at-risk phono traumatic behaviors, laryngeal symptoms, hydration, appropriate behavioral patterns for vocal performers, laryngo/gastro-esophageal or

pharyngeal reflux, and as well as other factors or causes. The mode of rendition of VHE included power point presentations, videos and also written handouts were given to the participants. Videos were used to show about healthy larynx and various vocal pathologies. With the aim to maximize the learning, multiple opportunities were provided for participants to raise their doubts and discussion throughout the session.

Analysis of the test scores indicated the presence of statistically significant change in all three types of the knowledge-based questions scores in posttest with respect to pre test scores, thereby highlighting the positive impact of VHE by resulting in increased knowledge and understanding in vocal health and hygiene.

The author concluded by emphasizing the “role of VHE” in creating and increasing the knowledge and awareness in relation to voice care and their at-risk phono traumatic behaviors or patterns in vocal performers – and thereby contributing to prevention of vocal problems or prevention of progression of voice disorders.

**In summary, the literature review gave us various insight, enabling us to understand and make several interesting inferences** (Pasa et al., 2007; Bolbol S, Zalat M, 2016; Pomaville et al., 2020). Authors have evaluated the attitude, knowledge and awareness related to voice care, vocal health and voice disorders wherein the results and findings emphasized the need and role of VHE in prevention and management of voice disorders, both isolation (VHE alone) and in parallel comparison with other approaches among various groups of singers (Yiu EM, 2003; Boominathan et al, 2008; Gilman et al., 2009; Braun-Janzen & Zeine. 2009; Kwak et al. 2014; by Pomaville et al., 2020), teachers (Duffy et al., 2003; Gillivan-Murphy et al., 2006; Pasa et al., 2007; Vetter 2016; Porcaro et al., 2021; Nallamuthu et al., 2021) and Rado jockeys(Timmermans et al. 2003; Divya et al.



2019; Balasubramanian et al. 2020). Several authors have investigated the role and effectiveness of VHE in prevention and treatment of voice disorders among teachers, singers and RJs and revealed supportive findings (Chan, 1994 ;Sapir et al., 1996; Ramig & Verdolini, 1998; Scrimgeour K, 2002; Yiu EM, 2003).

Even though, certain studies have also reported mixed findings indicating limited effectiveness of VHE programs in decreasing vocally abusive behaviors (Broaddus-Lawrence et al., 2000; Achey M, He M, 2016), they still reported the presence of positive impact and experience among the participants. A very recent comprehensive study by Nallamuthu et al., (2021) indicated the need and highlighted the role of socio-culturally appropriate VHE for achieving intended and desired outcome among the focus group.

Thus, with reference to the literature evidences and knowledge regarding the presence of enhanced interest among PVU in expanding their knowledge and the need of appropriate, relevant and focused VHE materials for the at-risk population the present study was initiated (Braun-Janzen & Zeine. 2009; Kwak et al. 2014; Gunjawate et al., 2016). This study is focused on, developing a socio-culturally, especially linguistically sensitive VHE material for Professional Voice Users (PVU) convergently for teachers, singers and RJs in Tamil language.

### **Aim and Objective**

The study aims at developing a public education material related to vocal health and voice care for Teachers, Singers and Radio Jockeys (RJs) who are specific groups of Professional Voice Users (PVU) in Tamil Language.

The objective of the present study, is to develop a standardized and language specific public education material for creating and increasing vocal health awareness among PVU with special focus on Teachers, Singers and RJs.

The public education material probes the following areas and topics related to vocal health and voice care:

- Basic anatomy and physiology of voice production in simple layman terms
- Basic introduction to vocal abuse and misuse
- Need of vocal hygiene awareness
- Customised suggestions for “vocal -wellbeing” specific to each group (Teachers, Singers and Radio Jockeys)
- Do’s and Do not’s related to voice care and vocal health
- Explanations to Frequently Asked Questions (FAQ’s)

## **Chapter III**

### **Methodology**

The development of public education material on vocal health for Professional Voice users (PVU) with special focus on Singers, Teachers and Radio Jockey in Tamil language involved the following levels /steps.

#### **Step 1: Source of information**

- Pre-existing public education materials related to voice care and voice disorders in Tamil and English was reviewed. Knowledge regarding the practical ground level voice related, concerns and queries were gained through direct informal meetings with the Professional Voice Users (PVUs) (Teachers, Singers and Radio Jockey) in Tamil Nadu by means of phone calls and in-person meetings.
- A set of 4-5 questions or doubts regarding “voice” in general, that these professionals had in mind (such a relationship between menopause and voice changes, reasons for the development of differences in male and female voices around adolescence etc) were obtained and considered so that they can be addressed in the public education material by providing appropriate explanation so that it will be beneficial to other members in general.

#### **Step 2: Organization of information**

Based on the knowledge from literature evidence and the information obtained through direct informal meetings from the professionals belonging to focus group, the public education material on vocal health was formulated in Tamil Language. It includes the following information for the very benefit of the focus group.

- Vocal anatomy and physiology in brief and simple terms,
- Common voice related issues in Singers, Teachers, Radio Jockey,
- Vocal hygiene related tips and suggestions with possible explanations,
- Explanation to Frequently Asked Questions (FAQ's),
- DO's and Do not's related to vocal care.

### **Step 3: Content validity**

The public education material, thus formulated, was subjected to content validity. The material was given separately, to three teachers (handling primary, secondary and higher secondary class) with more than 10 years of teaching experience who also currently in teaching field, a Radio Jockey with more than 1 year experience and a professional singer from Tamil Nadu for verification of the information and content related to their field. Simultaneously, One Speech language pathologist who had more than 5 years' experience in the field of voice research/pathology and one Otolaryngologist who had an experience of more than 5 years in voice assessment, evaluated the content for appropriateness and accuracy of the information. The booklet was then revised, as per the suggestions from the above professionals.

### **Step 4: Verification and suggestions from Language Expert**

The finalized material was then given to language expert, who is a higher secondary Tamil teacher, for the purpose of verification of appropriateness of word usage and correlation between the intended and written meaning of words. The suggestions, regarding replacement of words for better understanding and minor spelling errors were incorporated.

The material, thus developed is attached in Annexure I

## **Chapter IV**

### **Results and Discussion**

The current study involved, development of a linguistically and culturally compatible public education material for professional voice users (PVUs) with special focus on Teachers, Singers and Radio Jockeys in Tamil language. In order to gain knowledge and information regarding the practical conditions, prevailing voice related professional demands and existing voice care and vocal health related queries and concerns at individual level, direct in person informal interview and phone calls were done. In addition, existing public education materials in Tamil and English language were reviewed.

This added, valuable insights regarding the gap that has to be filled between the pre-existing public education materials and the ground level requirements with respect to creating and increasing the awareness and knowledge related to voice care and vocal health in the specific groups of professional voice users (Teachers, Singers and Radio Jockeys).

A comprehensive literature review, confined to our focus groups, provided a great deal of information related to the need, role and outcomes of such education materials with respect to different setups and context.

#### **Content Validity**

The public education material was formulated, in Tamil, based on the literature evidence and first-hand information and knowledge obtained from Professional Voice Users (PVUs) belonging to the focus group and was subjected to content validity. Three teachers, one Singer and one Radio Jockey (RJ) from Tamil Nadu verified the content and information related to their field. A set of 4-5 questions or doubts regarding “voice” in

general, that these professionals had in mind were obtained separately. One Speech Language Pathologist and one Otolaryngologist evaluated the content for appropriateness and information accuracy.

The suggestions from the professionals belonging to our focus groups were minimal, predominantly pertaining to the addition of few other concerns such as the consequences of menopause on vocal quality changes and also few were amused to know about the effect of caffeine intake on voice.

Interestingly, the queries put forward by teachers, included, questions and concerns not essentially confined to their personal or professional issues related to vocal health (such as concerns regarding voice during menopause)but also general voice and vocal wellbeing related questions such as “the reason for the development of difference in voice between male and female teens around the period of adolescence “which can be taken as an indicator for the presence of interest to expand their knowledge related to “basis of vocal mechanism “in general. This in turn might help them to understand their student community in a better way. Concerns of these professionals were addressed in the material, by providing appropriate explanations in simple terms under the Frequently Asked questions (FAQ) section.

The suggestions given by Speech Language Pathologist (SLP) included addition of relevant pictures, reduction and removal of certain information so that the material is appropriate and relevant with the context. Inclusion of DO's and DON'T's related to vocal hygiene and voice care in a concise manner at the end of the material for better understanding was another major suggestion given by SLP. Input regarding usage of appropriate words usage for better understating and outcome was suggested by Oto-

laryngologist. The proper employment of words, spelling and grammar (to increase the compatibility between intended and presented meaning) was ensured by Language expert. Each and every possible and feasible suggestions from all the professionals were incorporated in the developed material.

## **Discussion**

“Prevention is better than cure “as stated by Institution of Occupational Safety and Health– is one of the most commonly used proverbs especially when it comes to our wellbeing in general and health in particular. “Awareness and Knowledge” are the important keys that incline a person towards better, efficient self defense mechanisms and appropriate healthy behavior resulting in prevention of undesired or not the least prevention of progression of the undesired.

The most powerful reason behind establishing particular days for each condition (for example “April 16” which is International Voice Day) or disease is to educate the people about it and make them aware about its consequences, especially the community members so that they will be in a better position to prevent, identify and indulge themselves into proper management at the earliest.

In today’s world, “voice” is utilized as a primary tool by majority of individuals in the work force (Boltezar & Sereg Bahar, 2014) and thereby they are called as Professional Voice users (singers, teachers, actors RJs etc.). When there exists a change in voice and voice quality or problem in vocal mechanism or endurance of voice, especially in PVUs, it affects not only their professional life but also the quality of life as a whole (Sataloff ,2001).

Thereby it is highly “a need of the hour” to create and increase the awareness about vocal hygiene and appropriate behaviors.

Even though, the implications of poor or limited vocal hygiene, are not well defined in the development of voice problems (Behlau & Oliveira, 2009; Pomaville et al., 2020), the role of vocal hygiene awareness and vocal health in the prevention and treatment of voice disorders should not be underestimated. Ideally, it can be understood that, it is impractical to isolate the effects of VHE alone, in a comprehensive vocal management program. Many Researches have studied the effectiveness of combination of both direct and indirect approaches in the prevention and treatment of voice disorders and found supportive results (Gillivan-Murphy et al., 2006; Pasa et al., 2007).

While there exists, a number reports indicating the presence of laxity and anxiousness among professional voice users about seeking early voice care and management inspire of the presence of vocal problems along with lack of awareness about the role of SLP invoice care, identification of key factors at the ground level, that has contributed to the development of a negative attitude even in individuals (PVU) for whom voice is the primary modality of healthy livelihood is highly necessary (Braun-Janzen & Zeine, 2009; Gilman et al., 2009; Gunjawate et al., 2016; Kwak et al., 2014)

Fishbein's modified version of Dulany's theory of propositional control states that, specific behaviors can be indicated from specific intensions, which in turn is governed by two additional components- (a) first component is, the attitude if the individual, toward the act in question and (b) second component is the “perceived normative expectations” of reference groups (with respect to the individual), multiplied by the individual's motivation to comply with those expectations (Ajzen et al.,1973). In simpler terms, “treatment-seeking”



behaviors are based on a person's attitude toward treatment, gender as well as social norms that are related to the treatment." (p-760) (Gunjawate et al., 2016) "Culture" is a significant component, which plays a very major role with respect to the "attitude" and "activities" of the community or group in general and the individual in particular, in terms of imposing invisible code of conduct, there by influencing their beliefs, lifestyle, expectations and decision making (Kilty, 1978).

The present study is the result of an attempt , to develop such a standardized and culturally appropriate public education material especially for focused group of professional voice users (PVU). The active response and contribution of the PVUs, in terms of providing great insight regarding the practical aspects of their professional need and demands ,valuable suggestions and questions in-between their professional schedule exhibited the presence of motivation and interest in expand their knowledge and positive attitude towards the concept of "Vocal well-being". This can be taken as one of the primary and minor indicators of success of the public education material developed in this study.

## **Conclusion**

In the context of the “broad goal” of creating and increasing awareness and knowledge related to vocal health in PVUs, “public education materials” can be considered as one of the most feasible, user friendly, relatively durable, cost and time effective tool. Thereby, it can be inferred that, public educational materials / programs with culture and language and/ or community specific focus would serve the purpose, by creating and increasing the awareness and knowledge among PVUs, along with, promoting healthy and appropriate vocal behaviors, at the individual level, while, preserving the collective needs and identity of the reference community or groups. This in turn, may further incline the individual towards the incorporation of vocally hygienic practices and behaviors in their repertoire, along with the community or group support, while preserving the individual’s nature and demands. In general, there occurs a positive drift towards the concept of “vocal well-being” in the society.

**Implications**

The developed vocal health related public education material in Tamil language, can be utilized in creating and increasing the awareness and knowledge regarding vocal hygiene and voice care, both prevention and treatment process of voice disorders among PVUs convergently Teachers, Singers and Radio Jockeys (RJs).

**Limitations**

- The public education material developed in this study could not be validated in a large number of professionals due to prevailing pandemic situation and context.
- In future, the effectiveness of the material in increasing the awareness and knowledge among the professionals belonging to the focus group can be investigated for better understating in larger context.

## Summary

In present world, majority of the workforce is dependent on “their voice” to earn a living (Boltezar & Sereg Bahar, 2014). On the other hand, it is estimated that there is an increased occurrence of voice disorders in PVUs when compared to the general population (Boominathan et al., 2008; Hazlett et al., 2011). PVUs are at relatively more inclined towards acquiring voice disorders or vocal pathologies as a result of increased voice usage and possible vocal exploitation on the work or job settings along with individual related factors such as psychological stress, presence of other conditions (diseases or disorders), vocal behaviours, food patterns, life style etc (Stemple et al ,1995; Hazlett et al., 2011)

Creating and increasing vocal hygiene and voice care related awareness and knowledge are highly necessary and also the need of the hour. However, there exist high variation with respect to different class of PVU, in terms of their job nature, professional demands, occupational need, context and thus the degree of dependence on voice, vocal demands, vocal load is also variable in addition to the individual’s way of life, culture and other internal factors. Thus, a public education material/ program intended to create and/or increase awareness related to vocal health, hygiene and voice care must address the presence of heterogeneity with respect to different class of professional voice users (PVU) while being sensitive to the community needs, language and culture in general in order to get best possible outcome.

The present study, involves development of such a public education material for PVU with special focus and convergence on Singers, Teachers and Radio Jockeys in Tamil language. The material was developed and formulated based on the knowledge, information and suggestions acquired from the professionals belonging to the focus group

and literature evidence along with suggestions from a Speech Language pathologist and Otolaryngologist. The presence of interest and motivation in expanding their awareness and knowledge, exposed by the active participation and response of these professionals can be taken as the primary success of this study.

## References

- Achey M, He M, A. L. (2016). Vocal hygiene habits and vocal handicap among conservatory students of classical singing. *Journal of Voice*, 30, 192–197.
- Ajzen, I., & Fishbein, M. (1973). Attitudinal and normative variables as predictors of specific behavior. *Journal of Personality and Social Psychology*, 27(1), 41–57. <https://doi.org/10.1037/h0034440>
- Aronson AE, Bless DM (2009). *Clinical voice disorders*, 4th edn. Thieme, New York.
- Balasubramanian, S., Divya, P. S., & Ramar, A. (2020). *Vocal Hygiene Program for Information Technology Enabled Service Professionals*. 10(December), 174–186.
- Bateman, H. V. (1998). A structured introductory program of vocal hygiene for high school choral students. *Dissertation*, 274-9708968.
- Behlau, M., & Oliveira, G. (2009). Vocal hygiene for the voice professional. *Current Opinion in Otolaryngology and Head and Neck Surgery*, 17(3), 149–154. <https://doi.org/10.1097/MOO.0b013e32832af105>
- Bolbol S, Zalut M, H. R. (2016). Risk factors of voice disorders and impact of vocal hygiene awareness program among teachers in public schools in Egypt. *Journal of Voice*.
- Boltežar, L., & Bahar, M. Š. (2014). Voice disorders in occupations with vocal load in Slovenia. *Slovenian Journal of Public Health*, 53(4), 304.
- Boominathan, P., Chandrasekhar, D., Nagarajan, R., Madraswala, Z., & Rajan, A. (2008). Vocal Hygiene Awareness Program for Professional Voice Users (Teachers): An Evaluative Study from Chennai. *Asia Pacific Journal of Speech, Language and Hearing*, 11(1), 39–45. <https://doi.org/10.1179/136132808805297377>
- Boominathan, P., Rajendran, A., Nagarajan, R., Seethapathy, J., & Gnanasekar, M. (2008). Vocal Abuse and Vocal Hygiene Practices Among Different Level Professional Voice Users in India: A Survey. *Asia Pacific Journal of Speech, Language and Hearing*, 11(1), 47–53. <https://doi.org/10.1179/136132808805297322>
- Braun-Janzen, C., & Zeine, L. (2009). Singers' Interest and Knowledge Levels of Vocal Function and Dysfunction: Survey Findings. *Journal of Voice*, 23(4), 470–483. <https://doi.org/10.1016/j.jvoice.2008.01.001>
- Broadus-Lawrence P, Troele K, M. R. (2000). The effects of preventive vocal hygiene education on the vocal hygiene habits and perceptual vocal characteristics of training singers. *Journal of Voice*, 14, 58–71.
- Carding, Paul, Eva Carlson, Ruth Epstein, Lesley Mathieson, and Christina Shewell. "Formal perceptual evaluation of voice quality in the United Kingdom." *Logopedics Phoniatrics Vocology* 25, no. 3 (2000): 133-138.
- Chan, R. W. K. (1994). Does the voice improve with vocal hygiene education? A study of some instrumental voice measures in a group of kindergarten teachers. *Journal of Voice*, 8(3), 279–291. [https://doi.org/10.1016/S0892-1997\(05\)80300-5](https://doi.org/10.1016/S0892-1997(05)80300-5)

- Chitguppi, C., Raj, A., Meher, R., & Rathore, P. K. (2018). Speaking and Nonspeaking Voice Professionals: Who Has the Better Voice? *Journal of Voice*, 32(1), 45–50. <https://doi.org/10.1016/j.jvoice.2017.03.003>
- Divya, P. S., Venkat, S. R., & Ramasamy, K. (2019). *An Insight to Vocal Hygiene for Radio Jockeys - A Survey*. *Int J Health Sci Res*. 2019; 9(9):201-205.
- Duffy, O. M., & Hazlett, D. E. (2004). The impact of preventive voice care programs for training teachers: A longitudinal study. *Journal of Voice*, 18(1), 63–70. [https://doi.org/10.1016/S0892-1997\(03\)00088-2](https://doi.org/10.1016/S0892-1997(03)00088-2)
- Gillivan-Murphy, P., Drinnan, M. J., O'Dwyer, T. P., Ridha, H., & Carding, P. (2006). The Effectiveness of a Voice Treatment Approach for Teachers With Self-Reported Voice Problems. *Journal of Voice*, 20(3), 423–431. <https://doi.org/10.1016/j.jvoice.2005.08.002>
- Gilman, M., Merati, A. L., Klein, A. M., Hapner, E. R., & Johns, M. M. (2009). Performer's Attitudes Toward Seeking Health Care for Voice Issues: Understanding the Barriers. *Journal of Voice*, 23(2), 225–228. <https://doi.org/10.1016/j.jvoice.2007.08.003>
- Gobl, C., & Ní Chasaide, A. (2003). The role of voice quality in communicating emotion, mood and attitude. *Speech Communication*, 40(1–2), 189–212. [https://doi.org/10.1016/S0167-6393\(02\)00082-1](https://doi.org/10.1016/S0167-6393(02)00082-1)
- Gunjawate, D. R., Aithal, V. U., Guddattu, V., Kishore, A., & Bellur, R. (2016). Exploring Attitudes of Indian Classical Singers Toward Seeking Vocal Health Care. *Journal of Voice*, 30(6), 761.e23-761.e26. <https://doi.org/10.1016/j.jvoice.2015.10.002>
- Hazlett, D. E., Duffy, O. M., & Moorhead, S. A. (2011). Review of the impact of voice training on the vocal quality of professional voice users: Implications for vocal health and recommendations for further research. *Journal of Voice*, 25(2), 181–191. <https://doi.org/10.1016/j.jvoice.2009.08.005>
- Hunter, E. J., & Titze, I. R. (2010). Nonoccupational Settings. *Journal of Speech, Language, and Hearing Research*, 53(August), 862–876.
- Kilty, K. M. (1978). Attitudinal and normative variables as predictors of drinking behavior. *Journal of Studies on Alcohol*, 39(7), 1178–1194. <https://doi.org/10.15288/jsa.1978.39.1178>
- Kooijman, P. G. C., Thomas, G., Graamans, K., & de Jong, F. I. C. R. S. (2007). Psychosocial Impact of the Teacher's Voice Throughout the Career. *Journal of Voice*, 21(3), 316–324. <https://doi.org/10.1016/j.jvoice.2005.12.007>
- Koufman, J. A., & Isaacson, G. (1991). The spectrum of vocal dysfunction. *Otolaryngologic Clinics of North America*, 24(5), 985-988.
- Kwak, P. E., Stasney, C. R., Hathway, J., Minard, C. G., & Ongkasuwan, J. (2014). Knowledge, experience, and anxieties of young classical singers in training. *Journal of Voice*, 28(2), 191–195. <https://doi.org/10.1016/j.jvoice.2013.08.006>
- Lewis, C. L., & Muckey, F. S. (1916). The Natural Method of Voice Production. *The English Journal*, 5(3), 222. <https://doi.org/10.2307/801660>

- Morawska, J., & Niebudek-bogusz, E. (2017). *Risk factors and prevalence of voice disorders in different occupational groups – a review of literature*. 16(3), 94–102.
- Motel T, Fisher KV, Leydon C: Vo- cal warm-up increases phonation threshold pressure in soprano singers at high pitch. *J Voice* 2003;17: 160–167.
- Nallamuthu, A., Boominathan, P., Arunachalam, R., & Mariswamy, P. (2021). Outcomes of Vocal Hygiene Program in Facilitating Vocal Health in Female School Teachers With Voice Problems. *Journal of Voice*. <https://doi.org/10.1016/j.jvoice.2020.12.041>
- Nanjundeswaran C, Jacobson BH, Gartner-Schmidt J, et al. atigue index (VFI): development and validation. *J Voice*. 2015;29:433–440. <https://doi.org/10.1016/j.jvoice.2014.09.012>.57.
- Nusseck, M., Immerz, A., Spahn, C., Echternach, M., & Richter, B. (2021). Long-Term Effects of a Voice Training Program for Teachers on Vocal and Mental Health. *Journal of Voice*, 35(3), 438–446. <https://doi.org/10.1016/j.jvoice.2019.11.016>
- Pasa, G., Oates, J., & Dacakis, G. (2007). The relative effectiveness of vocal hygiene training and vocal function exercises in preventing voice disorders in primary school teachers. *Logopedics Phoniatrics Vocology*, 32(3), 128–140. <https://doi.org/10.1080/14015430701207774>
- Patel, S., Scherer, K. R., Björkner, E., & Sundberg, J. (2011). Mapping emotions into acoustic space: The role of voice production. *Biological Psychology*, 87(1), 93–98. <https://doi.org/10.1016/j.biopsycho.2011.02.010>
- Pomaville, F., Tekerlek, K., & Radford, A. (2020a). The Effectiveness of Vocal Hygiene Education for Decreasing At-Risk Vocal Behaviors in Vocal Performers. *Journal of Voice*, 34(5), 709–719. <https://doi.org/10.1016/j.jvoice.2019.03.004>
- Pomaville, F., Tekerlek, K., & Radford, A. (2020b). The Effectiveness of Vocal Hygiene Education for Decreasing At-Risk Vocal Behaviors in Vocal Performers. *Journal of Voice*, 34(5), 709–719. <https://doi.org/10.1016/j.jvoice.2019.03.004>
- Porcaro, C. K., Howery, S., Suhandron, A., & Gollery, T. (2021). Impact of Vocal Hygiene Training on Teachers’ Willingness to Change Vocal Behaviors. *Journal of Voice*, 35(3), 499.e1-499.e11. <https://doi.org/10.1016/j.jvoice.2019.11.011>
- Ramig, L. O., & Verdolini, K. (1998). Treatment efficacy: Voice disorders. *Journal of Speech, Language, and Hearing Research*, 41(1), 101–116. <https://doi.org/10.1044/jslhr.4101.s101>
- Sapir S, Mathers-Schmidt B, L. GW. (1996). Singers’ and non-singers’ vocal health, vocal behaviors and attitudes towards voice and singing: indirect findings from a questionnaire. *European Journal of Communication Disorders*, 31, 193–209.
- Sataloff, R. T. (2001). Professional voice users: the evaluation of voice disorders. *Occupational Medicine (Philadelphia, Pa.)*, 16(4), 633-47.
- Scrimgeour K, M. S. (2002). Effectiveness of a hearing conservation and vocal hygiene program for kindergarten children. *Spec Serv Sch*, 18, 133–150.
- Stemple JC. Voice Therapy: Clinical Studies. St. Louis: Mosby Yearbook; 1993.



- Stemple, J. C. (1993). Voice research: so what? A clearer view of voice production, 25 years of progress; the speaking voice. *Journal of Voice*, 7(4), 293-300.
- Stemple, J. C., Stanley, J., & Lee, L. (1995). Objective measures of voice production in normal subjects following prolonged voice use. *Journal of Voice*, 9(2), 127-133.
- Stemple JC, Roy N, Klaben BK. Clinical voice pathology: Theory and management. Plural Publishing; 2018 Dec 20.
- Timmermans, B., de Bodt, M., Wuyts, F., & van de Heyning, P. (2003). Vocal hygiene in radio students and in radio professionals. *Logopedics Phoniatrics Vocology*, 28(3), 127–132.
- Titze, I. R., Lemke, J., & Montequin, D. (1997). Populations in the US workforce who rely on voice as a primary tool of trade: a preliminary report. *Journal of voice*, 11(3), 254-259.
- Vetter, D. L., & Clay, A. (2016). Recommendations for Vocal Pedagogy Curriculum Based on a Survey of Singers' Knowledge and Research in Vocal Hygiene. *ProQuest Dissertations and Theses*, 153.
- Vilkman, E. (2004). Occupational safety and health aspects of voice and speech professions. *Folia Phoniatrica et Logopaedica*, 56(4), 220–253. <https://doi.org/10.1159/000078344>
- Williams, N., & Carding, P. (2005). *Occupational voice loss*. CRC Press.
- Yiu EM, C. R. (2003). Effect of hydration and vocal rest on the vocal fatigue in amateur karaoke singers. *Journal of Voice*, 17, 216–227.
- Yun YS, Kim MB, S. Y. (2007). The effect of vocal hygiene education for patients with vocal polyp. *OtolaryngolHeadNeck Surg*, 137, 569–575.
- Zhang, Z. (2016). Mechanics of human voice production and control. *The Journal of the Acoustical Society of America*, 140(4), 2614–2635. <https://doi.org/10.1121/1.4964>

## ANNEXURE – I

Public Education Material in Tamil for Professional voice users

Teachers, Singers and Radio Jockeys

ஆசிரியர்கள், பாடகர்கள் மற்றும் ரேடியோ ஜாக்கி  
ஆகியோருக்கான குரல்நலக் கையேடு





ಕಾಕ್ಕ ಕುರಲೆ ಁಯಿರೈಲ ಕಾಲಾಕ್ಕಾಲ್  
 ಕುಕ್ಕುರಲಿಡ್ಡುಂ ಂನ್ನ ಪಯನ್ ?

### இக் கையேட்டின் நோக்கம்:

தங்கள் குரலையே மூலதனமாகக் கொண்டு இயங்கும் (ப்ரொஃபஷனல் வாய்ஸ் யூசர்ஸ்) ரேடியோ ஜாக்கி, ஆசிரியர்கள் மற்றும் பாடகர்கள் ஆகியோர் தங்களுக்கு ஏற்படும் குரல் சார்ந்த பிரச்சினைகளையும் , குரல் நலம் காக்கத் தொடக்கம் முதலே மேற்கொள்ள வேண்டிய வழிமுறைகளையும் அறிந்துகொள்ள வழிகாட்டுவதே இக் கையேட்டின் முதன்மை நோக்கம்.

பலதரப்பட்ட நிலைகளில் பாடம் கற்பிக்கும் ஆசிரியர்கள்(மழலையர் வகுப்பு, தொடக்க நிலை, இடைநிலை ,மேல்நிலை, சிறார்களுக்கான கதை சொல்லிகள்) ,பாடகர்கள் (பின்னணிப் பாடகர்கள், பாட்டு கற்பிக்கும் ஆசிரியர்கள், கச்சேரிப் பாடகர்கள்) மற்றும் ரேடியோ ஜாக்கிகள் பலருக்கும் தங்கள் குரல் தொடர்பாக மனதில் எழும் வினாக்களையும் ஐயங்களையும் போக்கி, தீர்வினை நோக்கிப் பயணிக்கச் செய்யும் ஒரு சிறு முயற்சியே இக் கையேடு.

ஒரு நாளில் நாம் அதிகம் பயன்படுத்தக்கூடிய உறுப்பு என்ன என்று கேட்டால்,கைகள்,கால்கள்,விரல்கள் என்று நினைக்கலாம், ஆனால் உண்மையில் நாம், நம் குரல்வளையையே அதிகமாகப் பயன்படுத்துகிறோம்.

ஆம் ! அருகில் இருப்பவரை அழைப்பது, ரகசியம் சொல்வது, பாடுவது, அழுவது, கத்துவது என நம் மகிழ்ச்சியிலும் துயரத்திலும் நம்மை அறியாமலேயே நம் குரலைத் தொடர்ந்து பயன்படுத்திக் கொண்டே இருக்கிறோம்.

நாம் பிறந்த கணத்தில் அழுகையில் தொடங்கி 'அம்மா' என்ற வார்த்தை மூலம் பேசத் தொடங்கி இறுதி மூச்சின் கடைசி வினாடி வரை சப்தம் எழுப்பும் குரல்வளை மனித உடலின் ஒரு மகத்தான அமைப்பு. அப்படித்தானே?

### **குரலின் தனித்தன்மை:**

- நம்மை வெளி உலகிற்கு அறிமுகப்படுத்தும் ஊடகம் நமது குரல்.
- "குரல்" தான் ஒவ்வொருவரின் ஆளுமையையும் உணர்ச்சிகளையும் வெளிப்படுத்தும் கருவி.
- மனிதனின் தனிப்பட்ட அடையாளம் "குரல்."
- ஒவ்வொரு தனிமனிதனும் அவரது பேச்சுத்திறனின் அடிப்படையிலேதான் மதிப்பீடும், மதிப்பும் பெறுகிறார்கள்.பேசுவதற்கு அடிப்படையாகக் குரல் திகழ்கிறது.

- தனிப்பட்ட ஒவ்வொருவரின் குரல்தான் மனதில் அவர் எண்ணுவதையும் உடல் மொழியையும் இணைக்கும் பாலமாக அமைகிறது.
- குரலின் தொனி, ஆழம், வெளிப்படுத்தும் முறை தான் ஒருவர் சொல்ல வரும் கருத்தை ஆணித்தரமாக வெளிப்படுத்தும் கருவியாக இருப்பது மட்டுமின்றி கேட்போர் உள்வாங்கும் விதத்தை நிர்ணயிக்கும் கருவியாகவும் விளங்குகிறது.
- நமது குரல் தான் நமது தனிப்பட்ட மற்றும் தொழில் சார்ந்த உறவை மேம்படுத்தும் மற்றும் சாதகமாக்கும் நல்ல துணைவன் என்றால் மிகையிலலை.
- மனிதர்களை, விலங்குகளிடமிருந்து வேறுபடுத்தி ,பரிணாமத்தில் அடுத்த நிலைக்கு இட்டுச் செல்வதில் நமது குரல் வளம் ஒரு முக்கிய பங்கு,வகிக்கிறது.

### குரலே மூலதனம்:

சாதாரணமாக, மக்கள் பேசுவதற்கும், தன் உணர்ச்சிகளை வெளிப்படுத்துவதற்கும் மட்டுமே தங்களது குரலைப் பயன்படுத்துகிறார்கள். ஆனால்,குரலையே மூலதனமாகக் கொண்டு சமூகத்தின் சில பிரிவினர் இயங்கி வருகின்றனர் என்பது அறிவீர்களா?

ஆசிரியர்கள்(Teachers),அரசியல்வாதிகள்(Politicians) ,பாடகர்கள் (Singers)ரேடியோ ஜாக்கி(Radio Jockeys), போன்றவர்களுக்கெல்லாம் அடிப்படை மூலதனமே அவர்களின் குரல் தான்.

குரலில் சிறிய பிரச்சனை அல்லது மாற்றம் ஏற்பட்டால்கூட அவர்கள் செய்யும் தொழிலில் சிறப்பான பங்களிப்பை

அவர்களால் அளிக்க இயலாது.இவர்களையே "தொழில் சார்ந்து குரலை பயன்படுத்துபவர்கள்"(Occupational voice users) அல்லது"புரொஃபஷனல் வாய்ஸ் யூசர்ஸ்" (Professional voice users)என்கிறோம்.

### **குரல் நலம்:**

நாம் அனைவரும் உடல்நலத்தில் அதிக கவனம் செலுத்துவது இயல்பான ஒன்று.நல்ல உணவை உட்கொள்வது உடற்பயிற்சி செய்வது என்று நம் உடல் நலத்திற்காக முக்கியத்துவம் அளித்து, நிறையப் பயிற்சிகளிலும் முயற்சிகளிலும் ஈடுபடுகிறோம்.

### **ஆனால் குரல் நலத்திற்காக நாம் என்ன செய்கிறோம்?**

எப்படி உடல் நலத்திற்காக உடற்பயிற்சிகள் செய்கிறோமோ, அதேபோல குரல் நலத்திற்காக நாம் சிறிய பயிற்சிகள் மற்றும் வாழ்க்கை மாற்றங்கள் செய்வதன் மூலம்,நாம் நம் குரலை பாதிப்படையாமல் பாதுகாக்கலாம்.

குறிப்பாகத் தங்கள் குரலையே மூலதனமாகக் கொண்டு இயங்கும் பாடகர்கள், ஆசிரியர்கள், ரேடியோ ஜாக்கி ஆகியோர், தங்கள் குரல் நலத்திற்காகவும் சிறிது நேரம் செலவு செய்வதன் மூலம் குரல் தொடர்பான பிரச்சனைகள் அல்லது சிக்கல்கள் வராமல் எளிதாகத் தவிர்க்கலாம்.

## நாம் எப்படிப் பேசுகிறோம்?

நாம் மிகவும் இயல்பாக நினைப்பதையெல்லாம் பேசி விடுகிறோம். ஆனால், நாம் பேசுவதற்கு நம் ,உடலின் பல உறுப்புகள் ஒருங்கிணைந்து செயல்பட வேண்டியிருக்கிறது என்பதை அறிவோமா?

அவற்றில், ஏதேனும் ஒரு உறுப்பில் சிறிய பிரச்சனை அல்லது சிக்கல் ஏற்பட்டாலும் கூட, அது , நம் பேச்சுத் திறனிலும் , குரல் வளத்திலும் பெரிய ஏற்படுத்தக்கூடும்.

நாம் பேசுவதற்கு மிகவும் அடிப்படையான உடலியல் நிகழ்வு "சுவாசம்"(Breathing) தான். சுவாசித்த காற்றை வாய் வழியாக வெளியே விடும்போது தான் நாம் பேசுகிறோம்.

நுரையீரலில் இருந்து வெளியே வரும் காற்று , "லாரிங்ஸ்"(Larynx)எனப்படும் "வாய்ஸ் பாக்ஸ்"(Voice Box) வழியே அனுப்பப்படுகிறது. அப்போது,அக்காற்று லாரிங்சில் இருக்கும் மெல்லிய நாண்கள் போன்ற குரல்வளையில் அதிர்வுகளை ஏற்படுத்திச் செல்கிறது.

நமது வாய்ப் பகுதியில் உள்ள ஆர்டிகுலேட்டர்ஸ் எனப்படும் நாக்கு, மேலண்ணம், தாடை மற்றும் ஸைனஸஸ் ( காற்று அறைகள்) வழியே செல்லும் காற்று அதிர்வுறுவதால் ஒலியானது சொற்களாக வடிவம் பெற்றுப் "பேச்சாக"(Speech) உருமாகுகிறது.மேலும், சில சப்தங்கள் மற்றும் எழுத்துக்களை உச்சரிப்பதற்கு, நாசி வழியாகவும்காற்று வெளிப்படுகின்றது.

மேலும், இந்த உறுப்புகள் அனைத்தும் ஒருங்கிணைந்து செயல்பட, மூளையின் கட்டளைகள் அவசியமாகிறது.



## குரலை அளவுக்கதிகமாகப் பயன்படுத்தும் பொழுது

### என்ன நிகழும்?

குரலை, அளவுக்கு அதிகமாக ஓய்வின்றிப் பயன்படுத்தும்பொழுது குரல்வளையில் பாதிப்புகள் ஏற்படும்.

அதாவது,

- அளவுக்கதிகமாகக் கத்துவது,
- ஓய்வின்றிப் பேசிக்கொண்டே இருப்பது,
- இரைச்சலான இடத்தில் குரலை உயர்த்திப் பேசுவது,
- கத்தி அழுவது போன்றவை நம் குரல் வளைக்குப் பாதிப்பை ஏற்படுத்தும்.

குறிப்பாகப் பாடகர்கள், ஆசிரியர்கள் ,வானொலியில் பேசுபவர்கள், அரசியல்வாதிகள் உட்படப் பலருக்கு, குரல் தொடர்பான பிரச்சினைகள் ஏற்பட, சாத்தியக்கூறுகள் சற்று அதிகமாகவே உண்டு.

தேர்தல் நேரப் பிரச்சாரங்களில் / பரப்புரைகளில் அரசியல்வாதிகளின் குரலில் ஏற்படும் மாற்றங்களை நாம் கண்கூடாகப் பார்க்க இயலும். அறிகுறிகளைப் பொருட்படுத்தாமல், குரல்வளைக்கு ஓய்வு தராமல், தொடர்ச்சியாகப் பல மணி நேரம் மீண்டும் மீண்டும் பேசும்பொழுது, குரல் வளைக்கு நிரந்தரமான பாதிப்புகள் ஏற்படக்கூடும்.

பாதிப்பின் தன்மைக்கு ஏற்ப சிகிச்சை முறைகளின் தன்மையும், காலமும் வேறுபடும். எனவே, குரலில் ஏற்படும் முதல்கட்ட மாற்றங்களை அலட்சியம் செய்யாமல், சிகிச்சை மேற்கொள்ள வேண்டியது மிகவும் அவசியம்.

## அறிகுறிகள்:

- ❖ ககரகரப்பான குரல்(Hoarse voice)
- ❖ பேசும்பொழுது தொண்டையில் வலி.
- ❖ பேச்சின் இடையே அடிக்கடி செருமல்/ இருமல்.
- ❖ பேச்சின் வீச்சு (range) குறைதல்.
- ❖ இயல்பாகப் பேச இயலாத நிலை.
- ❖ குரல் கட்டையாக மாறுதல்.
- ❖ தொண்டையில் அதிக வறட்சி (excessive dry).
- ❖ தொடர்ந்து பேச இயலாத நிலை.
- ❖ குரல் உடைதல் (Pitch breaks)
- ❖ பேச்சின் இடையே சப்தம் வராமல் காற்று மட்டுமே வெளிப்படுதல்.
- ❖ தொண்டை கட்டுதல்.

## ஆசிரியர்கள்:

ஆசிரியர்களின் சக்திவாய்ந்த கருவி அவர்களின் "குரல் வளமே". ஒரு வகுப்பறையின் கவனத்தை, முழுமையாகத் தன்பால் திருப்பி, மாணவர்களுக்குத் தான் கற்பிக்க விழையும் கருத்துக்களை, அவர்களிடம் சென்று சேர்க்க மற்ற எல்லாத்துணைக்கருவிகளையும் விட குரலே சிறந்த கருவி ஆகும்.

இந்தக் காரணத்தினாலேயே ஆசிரியர்கள் ப்ரொஃபஷனல் வாய்ஸ் யூசர்ஸ் (professional voice users) என்று அழைக்கப்படுகின்றனர்.



ஆசிரியரின் "குரல்" தான் , ஒரு பாடத்தை மாணவர்கள் விரும்புவதற்கு , முக்கிய காரணிகளுள் ஒன்றாக அமைகிறது என்றால் மிகையிலலை.

மொழி ஆசிரியர் தொடங்கி, கணிதம், அறிவியல் ,சமூக அறிவியல் போன்ற ஒவ்வொரு பாட ஆசிரியரும் தன் குரலை மையப்படுத்தியே பாடத்தை மாணவன் மனதில் ஆழப் பதியும்

வண்ணம் ஏற்ற இறக்கத்துடன் பேசி, பாடி நடித்துக் கற்பிக்கிறார்கள்.

பெரும் சமுதாய மாற்றத்திற்கு வித்திடும் குரலில், பிரச்சனை ஏற்பட்டால் என்ன ஆகும்? அது, கற்பிக்கும் பணியில் தொய்வை ஏற்படுத்தி, கற்பித்தல்-கற்றல் என்ற இனிமையான நிகழ்வின் இயல்பான செயல்பாட்டிற்கு ஊறு விளைவிப்பதால் அது ஆசிரியர்-மாணவர் இருவருக்குமே பாதிப்பை ஏற்படுத்தும்.



"குறிப்பாக சிறிய வகுப்புகளுக்கு எடுக்கக்கூடிய ஆசிரியர்களே குரல் சம்பந்தப்பட்ட பிரச்சினைகளால் மற்ற ஆசிரியர்களை விட அதிக பாதிப்புக்கு உள்ளாகின்றனர் "என்கிறது ஆய்வின் முடிவுகள்.

தற்போதைய நோய்த்தொற்றுக் காலத்தில், முகக் கவசம் அணிந்து கொண்டு பாடம் எடுப்பது, சமூக இடைவெளியைப் பின்பற்றி பாடம் எடுப்பது போன்ற சமயங்களில் அதிகமாகக் குரலைப் பயன்படுத்த வேண்டிய நிலை ஏற்பட்டுள்ளது. இது ஆசிரியர்களுக்கு குரல் தொடர்பான பிரச்சினைகள் அதிகம் ஏற்படுவதற்கு ஒரு முக்கியமான காரணியாக அமைகிறது.

## ஆசிரியர்களுக்குக் குரல்வளையில் பொதுவாக ஏற்படும் பாதிப்புகள்:

- ❖ குரல்வளை அழற்சி (Inflammation)
- ❖ குரல் நாணில் சிறு கட்டிகள் (polyps/ nodules)
- ❖ வேறுநோய்கள் காரணமாக குரலில் மாற்றம்(, தைராய்டு சுரப்பி , மாதவிடாய் மற்றும் உடலின் ஹார்மோன் அளவு தொடர்பான பிரச்சினைகள்)

## என்ன தான் தீர்வு:

ஆசிரியர்களின் குரல் நலத்தைப் பாதுகாப்பதில் "வோக்கல் ஹைஜீன் ப்ரோகிராம்" (Vocal Hygiene Program) என்கிற முறை மிகவும் உதவிகரமாக அமைகிறது.

மிக எளிமையான பயிற்சிகள் சிலவற்றைச் செய்வதன் மூலம் ,குரல்வளையில் ஏற்படக்கூடிய பிரச்சினைகளைத் தவிர்க்கவும் குறைக்கவும் இயலும்.



கீழே கொடுக்கப்பட்டுள்ள ஆலோசனைகளைத் தினசரி வாழ்வில் நடைமுறைப்படுத்துவதன் மூலம் பெரிய அளவில் குரலுக்குப் பாதிப்பு ஏற்படாதவாறு ஆசிரியர்கள் தங்களின் குரல் வளத்தைப் பாதுகாப்பதோடு, குரல்வளை மற்றும் குரல் நாண் சார்ந்த பிரச்சனைகளிலிருந்து, தங்களைத் தற்காத்துக் கொள்ளலாம்.

- ❖ தொடர்ந்து பேசாமல் அவ்வப்போது குரலுக்கு ஓய்வு கொடுப்பது.
- ❖ அவ்வப்போது தண்ணீர் அருந்துவது-இது நம் தொண்டைப் பகுதியை வறட்சி அடையாமல் வைத்துக்கொள்ள உதவும்.
- ❖ காபி மற்றும் குளிர்மானங்களை அதிக அளவில் அருந்துவதைக் குறைத்துக்கொள்ள வேண்டும்.
- ❖ அடிக்கடி தொண்டை செருமுவதைத் தவிர்க்க வேண்டும். இது குரல்வளையை உராயச் செய்து பாதிப்பை ஏற்படுத்தக்கூடும்.
- ❖ அதிகமான சப்தம் /ஒலி உள்ள இடத்தில் பேசும்பொழுது, குரலை பன்மடங்கு உயர்த்திப் பேசாமல், கைதட்டி அழைப்பது, சைகை முறையைப் பயன்படுத்துவது, போன்ற மாற்று வழிகளைப் பயன்படுத்தலாம்.
- ❖ தேவைப்பட்டால் வகுப்பறையில், ஒலிவாங்கியைப் (Mic)பயன்படுத்தலாம்.

- ❖ கரும்பலகையில் எழுதும் போதும் அழிக்கும் போதும், சாக்பீஸ் -இல் துகள்கள் சிலருக்கு ஒவ்வாமையை ஏற்படுத்தும் என்பதால், வைட் போர்டையை(white board) அல்லது தரமான தூசு தரா சாக்பீஸைப் பயன்படுத்தலாம்.
- ❖ வகுப்பறையில், தங்கள் குரலுக்கு ஊறு ஏற்படுத்தாத, இடத்தைத் தேர்ந்தெடுத்து கற்பித்தலை மேற்கொள்ள வேண்டும்.
- ❖ அதிகக் குளிர்ச்சியான மற்றும் அதிகச் சூடான பானங்கள் மற்றும் உணவினை எடுத்துக்கொள்வதைத் தவிர்க்க வேண்டும்.
- ❖ ஒவ்வாமை ஏற்படுத்தக்கூடிய சானிடைசர்ஸ், ஸ்ப்ரேக்கள் ,நறுமணத் தைலங்கள் மற்றும் எண்ணெய்களைத் (மணமூட்டிகள்) தவிர்ப்பது, சுவாசப் பாதையை அழற்சியிலிருந்து பாதுகாக்கும்.
- ❖ குரலில் இலேசான மாற்றம் ஏற்பட்டாலும் அதனை அலட்சியப்படுத்தாமல், குரலுக்குச் சிறிது நேரம் ஓய்வு கொடுப்பதாலும், தேவைப்பட்டால் மருத்துவ ஆலோசனையைப் பெறுவதாலும்,"குரல்திரிபு"(மாற்றம்) தீவிரமடைவதைத் தவிர்க்கலாம்.

## பாடகர்கள்:

பாடகர்களுக்குத் தங்களுடைய குரல் தான் மிக முக்கியமான கருவி. பாடுதல் என்பது பேசுவது போல் அல்லாமல் தாளத்திற்கேற்ப, குரலை உயர்த்தியும் தாழ்த்தியும் இசையோடு இயைந்து செல்லும் ஒரு கலையாகும்.

பாடகர்கள் தங்களது குரலை மிக நுணுக்கமாகக் கையாளும் தன்மையுடையவர்கள்.



பொதுவாக, ஒருவர் முறையாகப் பாட்டு/ சங்கீதம் கற்றுக் கொண்டாலோ அல்லது பயிற்சி மேற்கொண்டாலோ, தங்கள் குரலை எப்படி நுணுக்கமாகக் கையாள்வது என்பதை, அடிப்படையிலிருந்து கற்றுக் கொள்வார்கள். அதனால், தன் குரல்வளைக்குப் பாதிப்பு ஏற்படாமல் எப்படித் தங்களது தேவைக்கேற்ப குரலை கையாள்வது? என்ற நுணுக்கத்தை அறிந்திருப்பார்கள்.

எப்படித் திடீரென்று உடற்பயிற்சி செய்தால் உடலில் அசதி மற்றும் வலி ஏற்படுகிறதோ, அதே போன்று பயிற்சி இல்லாமல் திடீரென்று குரலை அதிகமாகப் பயன்படுத்தும்பொழுது குரல்வளையில் வலி மற்றும் பாதிப்பு ஏற்படலாம்.

இதுமட்டுமின்றி, முறையாகச் சங்கீதம் கற்றுக் கொண்டவர்களும் கூட, தொடர்ந்து பலமணிநேரம் தங்களது குரலைப் பயன்படுத்தும்போது, குரல்வளையில் பாதிப்புகள்



ஏற்படலாம்.அதாவது, தொடர்ந்து கச்சேரிகள் அல்லது நிகழ்ச்சிகள் இருக்கும்போது பாடுவதைத் தவிர, அதற்கான பயிற்சிகளை மேற்கொள்ளும் பொழுது,இடைவிடாமல் தங்களது குரலைப் பயன்படுத்தும் நிலை ஏற்படுகிறது. இது குரல்வளைச் சோர்வு மற்றும் குரல் நாணில் பாதிப்பை ஏற்படுத்தும்.

### பொதுவாகக் குரல்வளையில் ஏற்படும் பாதிப்புகள்:

- ❖ ஸிங்கர்ஸ் நோடியூல் (Singer's nodule)
- ❖ குரல் நாணில் கட்டி (polyp)
- ❖ குரல் நாண் வீக்கம் /அழற்சி,இன்னும் பல...

### என்ன தான் கீர்வு:

- ❖ பல மணி நேரம் தொடர்ந்து பயிற்சி செய்வதைத் தவிர்ப்பது. அதாவது இடையிடையே சிறிது நேரம் குரலுக்கு ஓய்வு தருவது நல்லது.
- ❖ அவ்வப்போது தண்ணீர் அருந்துவது.
- ❖ நீராவி பிடிப்பதோடு(Steam inhalation), தொண்டை வறட்சியடையாமல் தவிர்க்க- ஈரப்பதமூட்டியைப் (Humidifier) அறையில் தேவைப்பட்டால் பயன்படுத்தலாம்.
- ❖ மருத்துவரின் ஆலோசனை இன்றி குறுகிய கால நிவாரணத்திற்காக, மருந்தகத்தில் தாமாக மருந்துகளை வாங்கி உட்கொள்வதைத் தவிர்க்க வேண்டும்.

- ❖ மதுபானங்கள் மற்றும் புகை பிடித்தலைத் தவிர்ப்பது நல்லது.
- ❖ "காப்பைன்" அதிகம் உள்ள பானங்களை உட்கொள்வதைக் குறைத்துக் கொள்ள வேண்டும்.
- ❖ அதீத குளிர்ச்சி அல்லது சூடான பானங்கள்/உணவுகளை உட்கொள்வதைத் தவிர்கலாம்.
- ❖ பருவ கால மாற்றங்களுக்கேற்ப, உணவு முறையை மாற்றி அமைத்துக் கொள்வதோடு குளிர்நட்டப்பட்ட அறைக்குள்ளேயே பல மணி நேரம் இருப்பதைத் குறைத்துக்கொள்ளலாம்.
- ❖ நிகழ்ச்சிகளுக்காகப் பல இடங்களுக்கு/நாடுகளுக்குப் பயணிக்கும்போது-தரமான உணவு, ஓய்வு மற்றும் போதுமான அளவு உறக்கத்தை உறுதி செய்து கொள்ள வேண்டும்.
- ❖ தினமும் காலையில் மூச்சுப் பயிற்சிகளையும் ,குரல் நல-மேம்பாட்டு ஆயத்தப் பயிற்சிகளையும் மேற்கொள்வது குரலின் வலிமையை/வளமையை மெருகேற்ற உதவும்.

## ரேடியோ ஜாக்கி (RJ):

"ரேடியோ ஜாக்கியின் " அடையாளமே துள்ளலான குரலும், துரிதமான பேச்சும் தான்.அத்தகைய வசீகரமான குரல்தான், நேயர்களை

வசப்படுத்துவதோடு, கேட்பவர்களுக்கு சுவாரஸ்யத்தை ஏற்படுத்தி, நிகழ்ச்சியை விரும்பிக் கேட்க வைக்கிறது. குரலால் மட்டுமே அடையாளம் காணப்படும்/காட்டப்படும் பெருமை ரேடியோ ஜாக்கிகளுக்கு மட்டுமே உண்டு.



ஒரு பண்பலை நிகழ்ச்சியின் (FM) வெற்றிக்கு அடித்தளமாக இருப்பது ரேடியோ ஜாக்கிகளின் குரல் தான்.

எனவே, அவர்கள் குரலை நுணுக்கமாகக் கையாள்வது அவசியமாகிறது. ஒரே மூச்சில் தொடர்ச்சியாகப் பல செய்திகளைத் தர வேண்டிய கட்டாயமும் அவர்களுக்கு இருக்கிறது.அடுத்தடுத்து நிகழ்ச்சிகள் இருக்கும்பொழுது,தொடர்ந்து குரலை ஓய்வின்றிப் பயன்படுத்தவேண்டிய நிலையும் ஏற்படுகிறது.

இது குரல்வளையில் பாதிப்பை ஏற்படுத்துவதோடு, குரலிலும் மாற்றங்களை ஏற்படுத்துகிறது. இந்த நிலை, நிகழ்ச்சியிலும் பிரதிபலித்து, தங்களின்முழு பங்களிப்பைத் தர இயலாத நிலை ஏற்படுவதோடு ,நிகழ்ச்சியின் தரத்தையும் பாதிக்கிறது.

## என்ன செய்யலாம்

- ❖ நீண்ட நேரம் குரலை உபயோகிப்பவர்களா நீங்கள்?  
இடையிடையே ஐந்து நிமிட இடைவெளி  
எடுத்துக்கொள்ளுங்கள். இது குரலைப் புத்துணர்வாக்கும்.
- ❖ ரேடியோ ஜாக்கியாகிய நீங்கள், சில நேரங்களில்  
அதிகாலையிலும் இரவிலும் பணிபுரிய வேண்டிய சூழல்  
இருப்பதால்- சரியான நேரத்தில் ஓய்வும், உணவும்  
அவசியம் என்பதை மறவாதீர்.
- ❖ தொண்டையில் ஏற்படும் வறட்சியைத் தவிர்க்க,  
நிகழ்ச்சியின் நடுவே சிறிதளவு தண்ணீர் பருகுவதை  
வழக்கமாக்கிக் கொள்ளுங்கள்.
- ❖ அதிகக் காரம், மசாலா சேர்த்த உணவுகளை  
உட்கொள்வதால், ஏற்படும் அமிலச் சுரப்பு, தொண்டைப்  
பகுதி வரை பாதிக்க வாய்ப்பு இருப்பதால் (இந்நிலை, GERD  
எனப்படும் கேஸ்ட்ரோ இஸோபேகல் ரிஃப்ளக்ஸ் டிஸாடர் -  
என்று அழைக்கப்படுகிறது) அதனைக் குறைத்துக்  
கொள்ளுங்கள்.
- ❖ அடிக்கடி காபி மற்றும் காற்று நிரப்பப்பட்ட பானங்கள்  
(Aerated/ carbonated drinks) அருந்துவதைத் தவிருங்கள்  
(இல்லையேல் காபியில் இருக்கும் காஃபைன் தொண்டைப்  
பகுதியில் அதீத வறட்சியை ஏற்படுத்த, குரல் மாற்றத்திற்கு  
வழிவகுத்துவிடும்).

- ❖ ரேடியோ ஜாக்கியாகிய நீங்கள், தொடர்ந்து பேசும் சூழல் இருப்பதால் தினந்தோறும் தவறாமல் மூச்சுப் பயிற்சி மேற்கொள்வதை வழக்கமாக்கிக் கொள்ளுங்கள். இது வைடல் - கெபாசிட்டியை (vital capacity) அதிகரிக்க உதவும்.
- ❖ பேசும் பொழுது ஒரு மூச்சிலேயே மிகப்பெரிய வாக்கியத்தையோ அல்லது வாக்கியங்களையோ பேசிமுடித்துவிட முயற்சிக்காமல், சரியான இடைவெளியில் மூச்சை இழுத்து, மீண்டும் அடுத்த வரியைத் தொடருங்கள். இது குரல் நாணின் மெல்லிய திசுக்களில் பாதிப்பு ஏற்படுவதைத் தவிர்ப்பதோடு, கேட்போருக்கு இனிமையாகவும் அமையும்.
- ❖ உங்கள் குரல் நலனைப் பாதுகாக்க, நீங்கள் புகைப்பிடித்தலைத் தவிர்ப்பதோடு, புகைப்பிடிப்பவர்கள் அருகில் நிற்பதையும் தவிருங்கள்.
- ❖ ஏற்கனவே பருவ நிலை மாற்றங்களாலோ அல்லது மற்ற காரணங்களாலோ, இருமல், தொண்டை கரகரப்பு, குரலில் மாற்றம் ஆகியவை ஏற்பட்டிருக்கும் நிலையில், அதனைப் பொருட்படுத்தாமல் மீண்டும் மீண்டும் குரலுக்கு வேலை கொடுக்காதீர். இது தீவிர பாதிப்பை குரல் வளைக்கு ஏற்படுத்திவிடும். இத்தகைய நேரங்களில், முழுமையாகக் குரலுக்கு ஓய்வு தருவதே, பாதிப்பின் தன்மையை தீவிரமடையாமல் பாதுகாக்கும்.

- ❖ சிலர் அடிக்கடி தொண்டையைச் செருமுவதை வழக்கமாக வைத்திருப்பீர்கள். இது குரல்நாணில் உராய்வை ஏற்படுத்தி, குரலின் வளமையை பலவீனமாக்கும். எனவே, அந்த வழக்கத்தை மாற்றிக்கொள்ள முயலலாமே!

## மனதில் தோன்றும் கேள்விகளும் விளக்கங்களும்:

### #) ஒவ்வொருவரின் குரலும் ஏன் வேறுபட்டு உள்ளது?

**விளக்கம்:** குரல் உருவாகத் தேவையான அடிப்படை உறுப்புகள் எல்லோருக்கும் பொதுவானது . ஆனால் குரல் எழுப்பும் சப்தமானது, தனிப்பட்ட ஒவ்வொருவரின், குரல் நாணின் அளவு(size) மற்றும் வடிவத்தைச் (shape)சார்ந்தது மட்டுமின்றி குரல் பாதை(Vocal tract) மற்றும் பேச்சொலி உருவாகும் விதத்தையும்(manner)சார்ந்தது.

### #) ஏன் ஆண்களுக்கும் பெண்களுக்கும் குரல் ஒரே போல இல்லை?

**விளக்கம்:** பதின் பருவம் (adolescence) வரை ஆண் மற்றும் பெண் குழந்தைகள் இருவருக்குமே, குரலின் தன்மை ஒரே மாதிரித்தான் இருக்கும். பருவ வயதில் ஏற்படும் முக்கியமான மாற்றங்களுள், குரல் மாற்றமும் ஒன்று. இப்பருவத்தில் "டெஸ்டோஸ்டீராண்" என்ற ஹார்மோன் பெண்களை விட ஆண்களிடம் அதிகம் சுரப்பதால் ஏற்படும், இரண்டாம் நிலை உடலியல் மாற்றங்களின் ஒரு பகுதியாகக் - குரல் நாண் தடிமனாக மாறுதல், லாரிங்ஸின் (larynx/voice box)அளவு பெரிதாவது போன்ற காரணங்களால், "பிட்ச்"(pitch)குறைந்து கட்டைக் குரல் போல ஒலிக்கிறது.

**#) செரிமானப் பிரச்சனைகளுக்கும் குரல் மாற்றத்திற்கும் தொடர்பு உண்டா?**

**விளக்கம்:** உணவு உண்டவுடன் படுத்துக்கொள்வது, சரியான நேரத்தில் உணவு சாப்பிடாமல் இருத்தல் போன்ற காரணங்களால் செரிமானப் பிரச்சனைகள் ஏற்படும். இதனால் இரைப்பையில் சுரக்கும் அமிலம் தொண்டை வழியாக மேல் எழும்பி வந்து குரல்வளையைப் பாதிக்கும். இது குரல் வளையில் எரிச்சல் மற்றும் புண்ணை ஏற்படுத்துவதோடு GERDக்கும் வழிவகுக்கும்.

**#) குரல் தொடர்பான பிரச்சனைகள் ஏற்பட்டால் யாரை அணுக வேண்டும்?**

**விளக்கம்:** குரலில் இலேசான மாற்றம் ஏற்பட்டாலும் அதனை அலட்சியப்படுத்தாமல், குரல் நல நிபுணர் அல்லது "ஸ்பீச் லாங்குவேஜ் பேதாலஜிஸ்ட்" ( speech language pathologist) அல்லது காது மூக்கு தொண்டை மருத்துவரை அணுகி ஆலோசனை பெறுவது அவசியம் .

குரலியல் நிபுணர் (voice specialist),உங்கள் குரல் மாதிரியை ஆராய்ந்து, உரிய ஆலோசனைகளையும் , பயிற்சிகளையும் கூறி வழிகாட்டுவார்.

மருந்துகளுக்கு இணையாகக், குரல் நலப் பயிற்சிகளையும் மேற்கொள்வதன் மூலம் ,விரைவில் குரல் மற்றும் குரல்வளைத் தொடர்பான பிரச்சனைகளிலிருந்து விடுபடலாம்.



### #) எந்தெந்த உணவுகள் குரலில் மாற்றத்தை ஏற்படுத்தும்?

**விளக்கம்:** அதிகக் காரம் ,மசாலா மற்றும் எண்ணெயில் பொரிக்கப்பட்ட உணவுகள், வாய்க்கு சுவையாக இருக்குமே தவிர குரலுக்கு சுகம் தராது.ஏனெனில் , முன்பே குறிப்பிட்டுள்ளபடி, GERD எனப்படும் "கேஸ்ட்ரோ ஈஸோஃபேகல் ரிஃப்ளக்ஸ் டிஸாடர்"(Gastro Esophageal Reflux Disorder) -என்ற நிலையை உருவாக்குவதால் குரல்வளையில் பாதிப்பு ஏற்படுகிறது. இதனாலும் குரலில் மாற்றம் ஏற்படலாம்.அதிகக் குளிர்ச்சியான மற்றும் சூடான உணவுப் பொருள்களும் குரல் நலனுக்கு உகந்தது அல்ல.

### #) மன அழுத்தத்திற்கும் குரல் மாற்றத்திற்கும் தொடர்பு உண்டா?

**விளக்கம்:** ஆம்! ஒருவர் அதிக மன அழுத்தத்திலோ அல்லது டிப்ரஷனிலோ இருக்கும் போது ,நம் உடலில் உள்ள ஒவ்வொரு செல்களும், தசைகளும் எதிர்வினையாற்றும். இது உடலில் சோர்வு, தசை வலி, செயலாற்றுவதில் சுணக்கம் போன்றவற்றை ஏற்படுத்துவதை அறிவோம். இதுபோலவே தொண்டைப் பகுதியில் உள்ள செல்கள் மற்றும் தசைகள் எதிர்வினையாற்றும்போது, ஏற்படும் தொண்டை வலி மற்றும் இறுக்கம் காரணமாக குரல் மாற்றம் ஏற்படும். இது ஒரு தீவிரமான நிலை. அத்தகைய நிலைக்கு, நம்மைக் கொண்டு செல்லாமல், நம்மை நாமே புத்துணர்ச்சியுடனும் ,உற்சாகத்துடனும் வைத்துக்கொள்ள வேண்டும் .தினமும் ,தியானம் ,யோகா, ஏரோபிக் மற்றும் நடைப்பயிற்சிகளை மேற்கொள்வதன் மூலம், மனதையும் உடலையும் சரியான நிலையில் வைத்துக் கொள்ளலாம்.

**#) தைராய்டு தொடர்பான பிரச்சனைகளுக்கும் குரல் மாற்றத்திற்கும் தொடர்பு உண்டா?**

**விளக்கம்:** ஆம்! தைராய்டு சுரப்பியும் ,லாரிங்ஸ் எனப்படும் வாய்ஸ் பாக்ஸும் அருகருகே உள்ள உறுப்புகள் ஆகும்.தைராய்டிற்கும் லாரிங்ஸிற்கும் இடையே உள்ள இணைப்புத் தசைகள், குரல் உருவாக்கத்தில் முக்கியப் பங்காற்றுகின்றன. எனவே, தைராய்டில் ஏற்படும் கட்டிகள், இயக்குநீர் (Hormone) குறைவு /அதிகரிப்பு ,வீக்கம் ஆகியவை நிச்சயமாகக் குரல்வளையையும், அதன் இயக்கத்தையும் பாதிக்கும்.

தைராய்டு சுரப்பியில் மேற்கொள்ளப்படும் அறுவை சிகிச்சையினால் கூட சில சமயங்களில், குரல் நாண் வாதம் (vocal cord paralysis) ஏற்பட்டு, அதனாலும் குரலில் மாற்றம் ஏற்படும்.

**#) மாதவிடாய் நிற்கும் காலத்தில் குரலில் மாற்றம் ஏற்படுமா?**

**விளக்கம்:** நம் உடலில் - செல்களின் இயக்கம் ,தசைகள் அவற்றிக்கு மூளை அனுப்பும் சமிக்கை கட்டளைகள் (Electrical impulses)உட்பட அனைத்தும் ,உடலின் ஹார்மோன் அளவை மையமாகக் கொண்டே செயல்படுகின்றன.

"மெனோபாஸ்"(Menopause) என்ற மாதவிடாய் நிற்கும் பருவம் ஒவ்வொரு பெண்ணும் உடலளவில் மாற்றங்களை எதிர்கொள்ளும் பருவம். அந்த சமயத்தில் உடலில் ஹார்மோன் அளவுகளில் ஏற்ற இறக்கம் ஏற்படும். இதன் விளைவாக மாதவிடாய் நிற்கும் பருவத்தில் பெண்களின் குரலில் மாற்றம் ஏற்பட வாய்ப்புகள் உள்ளன.

மேலும், இயல்பாக மாதவிடாய் தோன்றும் காலத்திற்கு முன்பும் பின்பும் ஏற்படும் ஹார்மோன் அளவில் ஏற்படும் வேறுபாடுகளால் குரலில் மாற்றம் ஏற்படுவதனை நாம் உணர இயலும். இது இயல்பான உடலியல் நிகழ்வுதான். இது தானாகச் சரியாகிவிடும்.

ஆனால், மாதவிடாய் தொடர்பான பிரச்சனைகளுக்கு மேற்கொள்ளப்படும் ஹார்மோன் சிகிச்சையின்போது சிலர் குரல் கட்டையாவதை உணர்ந்திருப்பர். வெளியிலிருந்து அளிக்கப்படும் செயற்கையான ஹார்மோன், குரல் நாணின் தன்மை மற்றும் இயல்பில் ஏற்படுத்தும் மாற்றமே இத்தகைய குரல் மாற்றத்திற்குக் காரணம்.

### **#) ஏன் குரலில் ஏற்படும் மாற்றத்தை அலட்சியப்படுத்தக்கூடாது?**

**விளக்கம்:** பெரும்பாலான நேரங்களில், சிலருக்கு அதிக மணம் தரக்கூடிய நறுமணமூட்டிகள் உபயோகிப்பதாலோ அல்லது பருவநிலை மாற்றம் காரணமாகவோ ஏற்படும் சாதாரண ஒவ்வாமை, குரலில் மாற்றத்தை ஏற்படுத்தலாம். இத்தகைய மாற்றம், தாமாக 5 முதல் 7 நாள்களில் சரியாகிவிடும். ஒருவேளை, மிக அதிகமாகக் குரலை உயர்த்திப் பேசியதலோ, அல்லது அளவிற்கு அதிகமாகப் பல மணிநேரம் குரலைத் தொடர்ந்து உபயோகித்தாலோ, குரலில் மாற்றம் ஏற்பட்டால் - கட்டாயமாகக் " குரலுக்கு முழு ஓய்வு (voice rest) குறிப்பிட்ட நாள்களுக்கு அளித்தால் மட்டுமே, குரலில் ஏற்பட்டுள்ள பிரச்சனை சீராகும்.

சில சமயங்களில் , "குரல் மாற்றம்" என்பது சுவாசப் பாதை அல்லது நுரையீரல் சார்பான மிகத் தீவிரமான பிரச்சனைகளின்/நோய்களின் முதல் கட்ட அறிகுறியாகக் கூட இருக்கலாம்.

எனவே, தொடர்ச்சியாகக் குரலில் மாற்றம் இருந்தாலோ அல்லது இயல்புக்கு மாறான வகையில், பேசும்போது சிரமம் ஏற்பட்டாலோ, அதனை அலட்சியம் செய்யாமல் உடனடியாகக், காது -மூக்கு - தொண்டை மருத்துவர் அல்லது குரல் நல நிபுணரை(பேச்சியல் நிபுணர்) சந்தித்து ஆலோசனை பெறுவது நல்லது.

<p>✓ <u>செய்ய வேண்டுவன</u></p> <p>(Do's)</p>	<p>✗ <u>தவிர்க்க வேண்டுவன</u></p> <p>(Do not's')</p>
<p>✓ அவ்வப்போது குரலுக்கு ஓய்வு தருவது.</p>	<p>✗ தொடர்ந்து நீண்ட நேரம் குரலுக்கு ஓய்வின்றிப் பேசுவது.</p>
<p>✓ வகுப்பறை, திறந்த வெளிமேடைகள் ஆகிய இடங்களில் பேசும்போது ஒலிபெருக்கியைப் பயன்படுத்துவது.</p>	<p>✗ அதிக இரைச்சலான இடங்களில், அதையும் மீறிக் குரல் எழுப்ப முயற்சிப்பது.</p>
<p>✓ தொண்டை வறட்சி அடையாமல், சரியான இடைவேளையில் தண்ணீர் அருந்துவது.</p>	<p>✗ அலவிற்கு அதிகமாகக் காபி, தேநீர், சோடா, மது ஆகியவற்றை அருந்துவது.</p>
<p>✓ தேவைப்பட்டால் ஈரப்பதமூட்டியைத் (Humidifier) தங்கள் அறையில் பயன்படுத்துவது.</p>	<p>✗ அடிக்கடி தொண்டையைச் செருமுவது.</p>

<p>✓ செரிமானப் பிரச்சனைகள் மற்றும் அமில மேலெழும்புதல் (Acid reflux) குரலில் மாற்றத்தை ஏற்படுத்தலாம் என்பதை அறிந்து செயல்படுக.</p>	<p>✗ "விஸ்பரிங்"(Whispering) எனப்படும் மெல்லிய குரலில் பேசுவது.</p> <p>✗ தன் குரல் திறனிற்கு மேல், குரலெழுப்பிக் கத்துவது.</p>
<p>✓ புகைப்பிடித்தலைத் தவிர்ப்பது.</p>	<p>✗ மாசடைந்த(தூசு, புகை) இடங்களில் நீண்ட நேரம் இருத்தல்.</p>
<p>✓ உறங்கும் போது, தலைப்பகுதியை சற்று உயர்த்தி வைத்துக் கொள்வது.</p>	<p>✗ உணவு உண்டவுடன் உறங்கச் செல்வது.</p>
<p>✓ குரலில் சிறிய மாற்றம் ஏற்பட்டாலும், அதனை அலட்சியம் செய்யாமல்- குரல் நல ஆலோசனை பெறுவது.</p>	<p>✗ குரலில் ஏற்படும் மாற்றங்களை அலட்சியப்படுத்துவது.</p>

வளமான குரலுக்குச் சொந்தக் காரர்களாகி  
நலமான எதிர்காலத்தை நாட்டிற்கு நல்கும்  
தரமான தங்களின் பணி சிறக்க

AIISH - இன்

சிரந் தாழ்ந்த வணக்கமும் வாழ்த்துகளும்.!

