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PROFESSIONAL PRACTICES OF SPEECH LANGUAGE PATHOLOGIST IN TREATING PRESBYPHONIA.

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Abstract

Background: Aging has an impact on phonatory system, just like it does for every other system in the body. As the person ages, larynx ages together with the body which result in Presbyphonia. The voice may change because of these growth-related changes. Voice disorder (Presbyphonia) in the elderly have a significant impact on communication and quality of life.

Objective: To identify the current therapy practices of SLPs for the treatment of presbyphonia in elderly patients.

Study design: A cross sectional survey was conducted in hospitals of Islamabad and Rawalpindi for the duration of six months. A convenient sampling technique was used for data collection. Both male and female Speech Language Pathologists were included in the study with their highest degree level and having at least two years' experience working with voice disorders or presbyphonia. The total sample size was n=100 SLPs out of which n= 15 were male and n=85 were females. Data was analyzed using SPSS version 22.

Results: The results of the study indicated that 75% respondents out of 100 sample size reported that speech therapy was their first course of treatment. Majority of the participants stated that physiologic-based treatments for presbyphonia was beneficial which included 22% reported using resonant voice therapy and 18% reported using Lee Silverman voice treatment. The therapy sessions taken for treatment of Presbyphonia was twice a month with duration of 30 to 60 minutes by the Speech Language Pathologist.

Conclusion: The findings of the study concluded that voice therapy was highly beneficial. Most SLPs used resonant voice therapy as primary treatment option followed by Lee Silver Man voice treatment for presbyphonia.

Keywords: Presbyphonia -Physiologic-Pathologists-resonant-Lee silver man

INTRODUCTION

Presbyphonia, is an anatomical alteration in the larynx associated with aging that affects voice production (1). It is the result of many alterations like shrinking of the vocal fold in the phonation-related system. (2)(3). Patients suffering from presbyphonia exhibit roughness, pitch changes, vocal instability, frailty, difficulty projecting their voices, and range loss. It also includes symptoms like coughing up mucus and throat clearing (4). Aging has an impact on how well the phonatory system works, just like it does for every other system in the body. The larynx has senile alterations that make it more non-linear which affects the voice quality of the patient. As the population ages, this illness is becoming more prevalent nowadays. The larynx ages together with the body which significantly alters a person's vocal range due to these growth-related changes (5).

In older people with vocal issues, Presbyphonia is a mix of physiological and anatomical changes brought on by the aging of the larynx. Others may be preventable or reversible, while some changes are predicted. The most prevalent clinical sign of an aging voice is phonation fatigue. Organic laryngeal lesions are the cause of the vocal issues that come with age (6). Its thyroid includes this genuine vocal tract (TVFs). These are contained within five distinct layers of tissues, each with various degrees of elasticity and viscosity. The layers run from superficial to deep and include an epithelium, a three-layered section of connective tissue known as the Lamina Propria, and a smooth muscle (the thyroarytenoid muscle). Age-related alterations within every level of vocal cords have been observed (7). Voice aging is characterized by decreasing voice projection and vocal endurance, raucousness, and difficulty being heard in noisy circumstances (8).

Presbyphonia is a natural phenomenon that can significantly alter a person's vocal range. This is a serious issue for those who utilize their voices professionally (9). The likelihood of developing vocal problems increases with increasing overuse of voice. A focus on anomalies, inflammation, systemic illnesses, trauma upsetting the larynx, resonance problems, and Presbylaryngis is an indicator of the etiology and pathogenesis of dysphonia (10).

Compared to younger people with identical issues, elderly people are more likely to say that voice worries have a negative influence on their quality of life. Older people claim that voice issues have a substantial impact on their daily life in a number of ways, including the need for more vocal effort, greater pain while speaking, anxiety and blockage in the voice, and annoyance at having to repeat themselves in order to be understood (7). Results of one study indicated that 12 to 35 percent of the elderly population had vocal difficulty (1). Throughout their life, 50% of older patients report no changes in their voice. The majority of people were satisfied with their own voices, but 65% indicated the voice was qualitatively different, and a phonological examination showed abnormalities in 31.5 percent of the participants (11).

The treatment options for presbyphonia begin with the improvement of extrinsic contributing variables such as voice treatment, physical conditioning, respiratory status, medicines, and comorbidities. Vocal training has been shown to improve presbyphonia in patients who are compliant, with measurable outcomes including better glottis closure, decreased breathiness, increased maximum phonation time, and higher subglottic closure pressure. Sometimes voice treatment by itself does not yield the best outcomes. Medical and surgical procedures may include injection of vocal folds, augment, or laryngeal framework surgery for glottal incapacity and phonatory effectiveness. Both are frequently employed in the treatment of Presbylaryngis as well as the management of vocal fold paresis or paralysis (5,12). A recent study of laryngologists showed the most popular first-line treatment for presbyphonia was voice therapy. Like surgery, voice treatment still offers a variety of solutions. The finding made by speech-language pathologists during assessment should serve as the

foundation for decisions related to objectives of therapy, the comprehensive treatments employed in therapy, the frequency, length, severity of voice therapy, and even eligibility for therapy (13).

Previous research indicates that the first course treatment by the Speech Language Pathologist was physiological techniques to treat presbyphonia including resonance voice therapy , Lee Silverman Voice treatment and Vocal function Exercises with symptomatic and vocal hygiene approaches to being used less far less frequently (7).

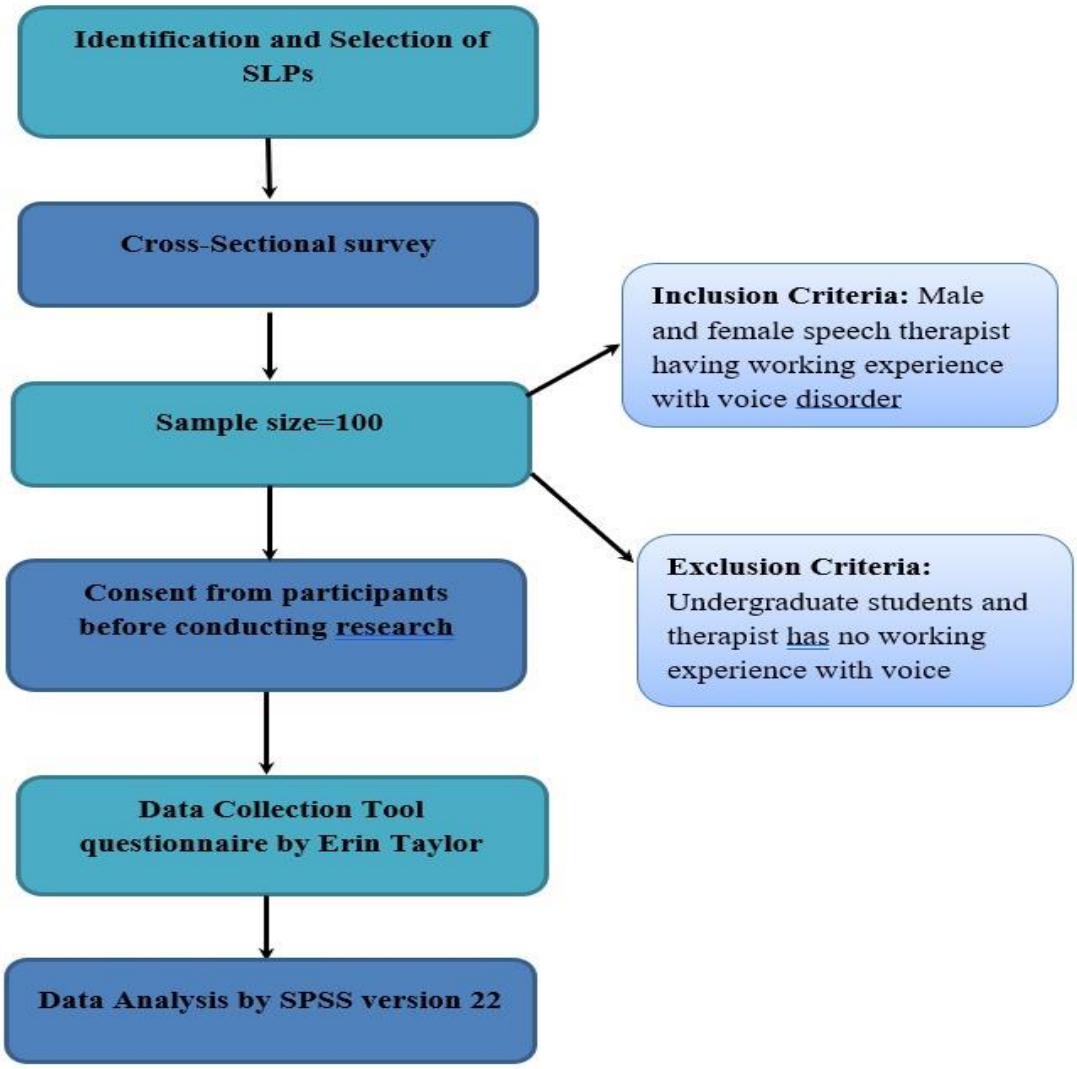
The results offer new proof that voice therapy exercises are effective in treating age-related dysphonia, and they recommend PhoRTE (phonation resistance training exercises) therapy as an additional treatment option for this population to enhance voice-related life satisfaction and decrease perceived vocal strength (14).

In the recent study, voice therapy exercise for the elderly (VTE) was designed having 16 sessions, with duration of 30 minutes and occurring four occasions per week with task assignments. It resulted in a general decline in voice deviance, roughness and breathiness on sustained phonation and speaking. It has shown to be effective in the management of presbyphonia in terms of voice quality, voice-related quality of life, and laryngeal alterations (11).

This current study was the first attempt to identify the various treatments for presbyphonia. It will create a foundation to further explore the need of training programs in treating presbyphonia for clinicians. It will assist Speech Language Pathologist to increase the efficacy for the treatment procedures for future implications.

METHODOLOGY

A Cross Sectional Survey was conducted at hospitals of Islamabad and Rawalpindi after approval from the research ethical committee of Riphah international university (with Ref #Riphah /RCRS/REC/023570). The non-probability convenient sampling technique was used for data collection using a questionnaire developed by Erin Taylor Carey. Both male and female SLPs with at least 2 years of voice related professional experience was included in the study. The total sample size included 100 participants out of which n= 15 male and n=85 females. Consent was taken from all the participants. The scale comprised of total eleven questions about presbyphonia and six demographic questions. The scale items included general background questions (gender, education history) as well as questions regarding type of workplace, the number of years spent dealing with patients having voice disorder and particular training. Participants were asked about the exact methods they used to diagnose and treat Presbyphonia. Additional questions included therapeutic methods, their frequency, the number of sessions needed to complete a given therapy, and their efficacy in treating presbyphonia. Data were analyzed using SPSS version 22 and formulated using frequency and percentage indicated by using bar charts graphically.



Study Flow Diagram

The study included 100 participants (SLPs) who were dealing with voice disorders or presbyphonia among them 85% (n=85) participants were female and 15% (n=15) were male. In the selected sample 75 % (n=75) possessed a master's degree in speech language pathology. The participants reported 57 %(n=57) have less than 5 years of experience. The demographic data is showed in figure 1. The number of year's participants had treated voice cases varied greatly. As 38 %(n=38) had 6 to 10 years of experience and some reported 37% (n=37) treating voice cases.

Table 1 Course of treatment for presbyphonia

Therapy	Frequency	Percent
Medication	7	7%
Surgery	17	17%
Speech therapy	75	75%
Total	100	100%

The table shows Initial course of therapy. It indicates that the vast majority (n=75) of respondents said they began their treatment with speech therapy, as opposed to using medical and surgical procedures.

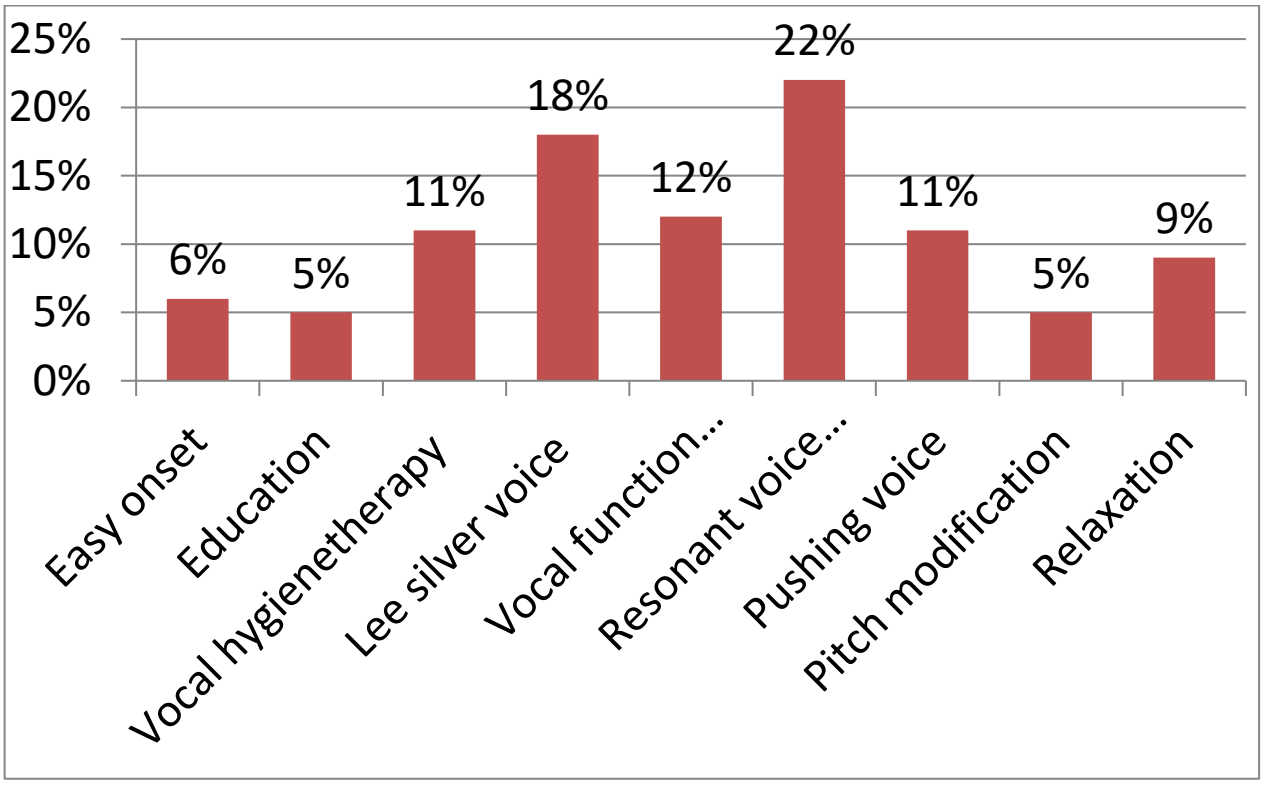


Figure 3. Treatment Method for Presbyphonia

The simple bar graph shows Resonant voice therapy was reported by the participants were 22% (n=22). Vocal hygiene therapy was 11% (n=11) and Lee Silverman voice treatment was 18% (n=18). These techniques are typically the most effective.

Table 3. Frequency of treatment

Visitation frequency	Frequency	Percent
Once every month	31	31%
Twice every month	44	44%
Once each week	12	12%
Twice per week	8	8%
At least three times every week	5	5%
Total	100	100%

The table shows that 44% of participants managed Presbyphonia patients twice each month and 31% reported managing once a month. And only 12 %(n=12) to 5 % (n=5) reported to have managed 1 to 3 times per week.

Table 3.9 Average Duration of therapy session for Management of Presbyphonia

Average session length in hours	Frequency	Percent
0.5-1.0 (30 min- 60min)	50	50.0%
1.25-2.0 (85min-120 min)	42	42.0%
2.25-3.0 (145min- 180min)	5	5.0%
More than 4.0 (more than 240 min)	1	1.0%
Total	100	100.0%

The table indicates 50% SLP seeing patients per therapy sessions for the duration of 30 to 60 minutes and 42% reported 85 to 120 minutes.

Table 4. Perspective regarding speech therapy

Respondent's perceptions	Frequency	Percentage
Not at all	1	1%
Slightly helpful	5	5%
Somewhat helpful	6	6%
Adequate	11	11%
Beneficial	37	37%
Very beneficial	29	29%
Extremely beneficial	11	11%
Total	100	100%

The table indicates Advantage of Voice Therapy. It represents that the majority of participants considered voice therapy was quite favorable for their clients who had presbyphonia.

DISCUSSION

The study's primary goal was to identify the presbyphonia treatment methods used by SLPs. According to the current study, 75% of respondents out of 100, reported that the initial phase of care for those with presbyphonia is speech therapy as the first course of treatment. The result of the current study correlates with previous research study in which 95% respondents also believed that speech therapy is the first option for the treatment of presbyphonia (4). Only 7% of participants in the current study were seen to be satisfied with the medicine. However, in one retrospective analysis, 8% (n=8) to 19% (n=19) of patients self-reported favorable response towards injectable augmentation (15).

According to present study results, many voice therapists treat presbyphonia patients using physiologic treatments, such as resonant voice therapy (RVT) (22%), Lee Silverman voice therapy (LSVT) (18%), vocal function exercises (VFEs) (12%), and vocal hygiene therapy (11%) which is strongly supported by literature as most Speech language pathologist are using resonant voice therapy (RVT), as the presbyphonia treatment modality. Another research proves that resonant voice therapy 20%, Lee Silverman voice treatment 3% and vocal fold exercises 26% vocal hygiene therapy 1% are effective treatments for presbyphonia (7).

The current study results indicated 50% of SLP see patients per therapy session for the duration of 30 to 60 minutes and 42% reported 85 to 120 minutes which correlates with the previous research of having voice therapy sessions for the duration of 30 minutes but contradicts for the frequency of session which indicated sessions four times per week has a total of 16 sessions for voice therapy exercises (VTE) for the elderly suffering from prebyphonia (14).

Also, the current study, showed 44% of SLPs managed Presbyphonia patients twice each month and 31% reported managing once a month. And only 12 %(n=12) to 5 % (n=5) reported to have managed 1 to 3 times per week which is very less as compared to the recent study in which voice therapy exercise for the elderly (VTE) is designed having 16 sessions, occurring four occasions per week with task assignments (15). The current study highlights the need for more educational awareness and research on the topic of presbyphonia in Pakistan. It also highlights bridging the gap between SLPs and patients of presbyphonia to discuss the duration, and frequency of voice therapy treatment. It will help them in the areas of consistency and compliance of voice therapy treatment to yield better results in terms of their voice quality, voice-related quality of life, and laryngeal alterations for the management of patients suffering from Presbyphonia.

CONCLUSION

The present study concludes that majority of Speech language pathologist are using resonant voice therapy (RVT), as the presbyphonia treatment modality.The findings of the research study are optimistic, and supported by previous literature which indicates that the majority of the Speech language pathologists considered physiologic methods includes resonant voice therapy (RVT), Lee

Silverman voice therapy (LSVT), vocal function exercises (VFEs), and vocal hygiene therapy to treat presbyphonia.

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