

Comparison of vocal hygiene awareness among police people (railway, armed and traffic police)

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I. Introduction

Voice is the laryngeal modification of pulmonary air stream, which is further modified by the configuration of vocal tract.

A voice disorder occurs when voice quality, pitch and loudness differ or are inappropriate for an individual's age, gender, cultural background and geographic location. (Aronson and Bless, 2009; Boone et al, 2010; Lee et al, 2004)

People who need their voice to carry out their job is considered as a professional voice users. Who also considered as atheistic voice users. As their voice is used more extensively and strenuous than that of non-professional voice users.

Professional voice users are those who directly depend on vocal communication for their livelihood. (Stemple, 1995)

Vocal abuse and misuse is where you use your voice in specific ways that can contribute to or cause the development of laryngeal pathologies. This means that you sprain or strain your voice resulting in injury to one or more of your vocal cords.

Vocal hygiene consists of the habits you perform in order to maintain a healthy, strong and powerful voice.

Vocal hygiene involves the practice you do, day in and day out in order to ensure your voice performs at its best. Voice issues are more common in professional voice users. Such as lectures and instructors. As a result, the current study contributes to raising awareness about vocal problems and other vocal pathology caused by voice abuse as well as the three phrases of prevention. Which include primary prevention, which entails removing anything that could cause a voice disorder and secondary prevention, which entails removing something that could cause a voice disorder. Early diagnosis and treatment of voice problem is a secondary preventative strategy. Tertiary prevention, which encompasses physical, psychological and occupational intervention to return the patient to a normal or near-normal state.

Police personal are non-vocal professionals. Nonetheless their voice is important to their job and they use it more their day-to-day life. The police force is a governmental service that falls under the umbrella of the all-India services. Railway police, Traffic police, Armed police are three professional uniformed services.

Chitguppi, Raj, Mehar and Rathor (2019) analysed the voice of professional voice users (PVU) is comparable with that of non-professional voice users (NPVU). Both of whom have no obvious vocal cord lesion. PVU had a significantly higher incidence of voice related complaints compared with NPVU. The former group also showed a higher deviation from the normative data. A significant influence of gender and the duration of work experience was also observed among PVU and concluded that the voice of an apparently normal PVU is not similar to that of an apparently normal NPVU. Female PVUs and PVUs with a longer duration of work experience show the highest deviation from normative data.

Prakash Boominathan , Divya Chandrashekhar , Roopa Nagarajan , Madraswala Zainab (2008) investigated the efficacy of one such program on vocal hygiene education (lecture demonstration) designed for school teachers in Chennai. A questionnaire addressing various issue or aspects of vocal hygiene was developed. The teachers had to complete the same twice (pre and post education). These were compared for difference in scores which suggested that the teachers had better awareness after the program.

II. REVIEW OF LITERATURE

Individuals who are not entirely reliant on their voice to learn their living are known as non-professional voice users (the Indian police force is a governmental service that falls under the umbrella of the all-India services. Railway police, traffic police and armed police are three professional uniformed services)

Voice is the laryngeal modification of the pulmonary air stream which is the further modified by the

configuration of vocal tract (Johnson, Fredrick & Spriesterrbach, 1963). Anyone who needs their voice to carry out their job is considered as professional voice users. Professional voice users are also considered athletic voice users because their voice use is more extensive and strenuous than that of non-professional voice users. "Professional voice users are those who are directly dependent on vocal communication for the livelihood" (Stemple, 1995).

Remembering steps for vocal hygiene

- V-value your voice through healthy diet and lifestyle
- O-optimize your voice with vocal warm-ups before use
- I-invest in your voice with training in proper voice technique
- C-cherish your voice by avoiding voice misuse, overuse and abuse
- E-exercise your voice to increase endurance and power

Koufmann & Issacson (1991) evolved a classification of vocal professional based on their voice use and risk.

Level 1: Include the elite vocal performers who are sophisticated voice users like the singers and actors, where even a single vocal difficulty can cause serious consequences to them and their careers.

Level 2: Include the professional voice users whom even a moderate vocal difficulty would prevent adequate job performance, clergy man, lecturers/ teachers, politician public speakers and telephone operators are classified in this level of voice users.

Level 3: Includes the non-vocal professional like lawyer. They can perform their job with slight or moderate voice problems; only severe dysphonic endangerous adequate job performances.

Level 4: Non vocal non-professionals which include laborers and clerks. The non-professionals are not impeded from doing his or her work when they experience any kind of dysphonia.

There is an old dictum 'Prevention is better than cure' and it still holds well even in the modern world. Several authors have addressed the importance of the prevention of voice disorders among those who work in vocally demanding occupations, such as teachers (Fritzell, 1996; Verdolini & Ramig, 2001; Morton & Watson, 2001 Yiu, 2002; Roy & Merrill, 2004).

Marge (1991) has identified two types of prevention. Primary prevention refers to elimination of something that might cause a voice disorder. For example, quitting smoking is a preventive act in-order to prevent future occurrence of voice disorders, while secondary prevention involves early detection and treatment of voice disorders. There is another level in the prevention called tertiary prevention, also called as rehabilitation, which includes physical, psychosocial and vocational measures taken to restore the patient back to or near normal condition. Several studies have reported on the outcome of vocal hygiene education and voice training for subjects who do not suffer from voice disorders but who belong to the risk groups of such problems.

Prolonged voice use for verbal instruction in the presence of background noise is primary cause of voice problems of members of this profession (Smith, Lemke, Taylor, Kirchner & Hoffman, 1998). Other causes include improper dietary habits, medical conditions, stress, anxiety and psychological factors. Deviant voice qualities, inability to sustain phonation, vocal fatigue, pain during phonation and throat irritation are some of the reported voice problems resulting from these causes (Yiu, 2002; Boominathan, 2008).

Vocal hygiene is an essential component of treatment. In some cases, vocal hygiene may be the knowledge of what is traumatic or stressful to the vocal folds, techniques to improve or expedite recovery and the reduction or elimination of throat clearing.

Vocal Hygiene:

-Hydrate: Hydration is essential for the best functioning of the vocal tract. Be sure to drink plenty of healthy fluids throughout the day, though room temperature water is the best.

-Breathing: Make sure you have enough air support for everything you need to say. Try not to speak to the very end of your breath, renewing it more often by pausing, if necessary.

Voice Production:

• **Use an easy approach to voice production.** Abrupt hard onsets of voice initiation can be traumatic to the vocal fold tissues.

• **Use voice that is most optimal for you.** Using a pitch range level that is either inappropriately high or low can put excess stress on the vocal mechanism. Don't make strange noises with your voice and try not to imitate voices that are abrasive.

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- **Avoid using a voice that is too loud.** Yelling and screaming, or talking, laughing, or singing louder than you absolutely must can be quite abrasive to the vocal fold tissues and can contribute to swelling and altered voice production.
 - **Avoid excess talking.** Pay attention to when your throat feels tired. Try not to push it. If you need to talk for extended periods make sure to give it a rest 10 minutes for every 2 hours of talking.

 - **Do not whisper.** Whispering has a drying effect on the mucosa of the vocal folds. It also forces the airstream during expiration and in turn can increase muscular tension and effort somewhere in the vocal mechanism.

 - **Use a headset** rather than cradling the phone between your shoulder and you ear, if you must be on the telephone for extended periods of time.
 - **Influencing daily habits and behaviors:**
 - **Cut down and eventually eliminate** excessive coughing, habitual throat clearing, or hard sneezing. If necessary, keep a journal of how often you clear your throat to chart frequency, time of day, and throat sensations before and after. This will assist you in making connections between your behaviors and voice health.
 - **Thickened** mucous may be the result of **gastric reflux problems**. See your doctor to aid you in its management. Reflux can contribute to and exacerbate voice disturbances.
 - **Get enough rest.** When one is fatigued, the natural voice is lower in intensity and sometimes in pitch and tone, contributing to forced voice in order to be heard. Take a moment or two during the day to stop and relax.
 - **Stay healthy.** The coughing and sneezing commonly associated with a cold or flu can contribute to edema/swelling in the laryngeal area as well as irritation to the mucosal tissue.

 - **Don't smoke anything**, the evidence bears out that smoking is directly related to laryngeal cancer. Beyond the direct effects on the vocal folds themselves, smoking can cause respiratory problems which can have a direct effect on voice production.

 - **Try to avoid smoky environments.** Second hand smoke acts as an irritant to the mucosal lining of the vocal tract and lungs.

 - **Avoid excess alcoholic consumption.** Alcohol contributes to the drying of mucosal linings of tissues. Also, alcohol makes the stomach produce more acid than usual, which can lead to acid reflux. Alcohol further increases this risk of acid backflow because it also relaxes the lower esophageal sphincter (LES), allowing liquid to pass through more easily.
 - **Do not** use mouthwash, which contains over 25% alcohol as it can be drying to delicate tissues. If you think that you need a mouthwash more than just occasionally, see your dentist for a check-up. Offensive mouth odors can be caused by tooth decay and/or gastric reflux.
 - **When experiencing a vocal disturbance**
 - **See a physician immediately** if you have laryngitis for more than seven days or pain in the throat, jaw, or ear upon speaking, eating, or swallowing for more than one day.
 - **Reduce or avoid** talking when you have an upper respiratory infection such as a cold. See a physician if the cold persists, especially a chest cold which has persisted for more than seven days.
 - **Do not** sing, act in plays, or give speeches or oral reports if you have a vocal disturbance or an upper respiratory infection. If you absolutely must speak to a large group, be sure to use voice amplification technology (aka microphone).
 - **When experiencing a vocal disturbance**, if you must speak to a group, then sit in the corner of the room so that you can be heard easily without talking loudly, and then speak only when others in the room are quiet. If you can obtain amplification of your voice when speaking to groups, it is more desirable than attempting to project your voice without assistance. Also, limit the amount of time speaking under such circumstances.

Vocal misuse and abuse were predominant causative factors for voice problems in vocations involving high demands on vocal mechanism, alone or in combination with biologic and psychosomatic factors, which may result in chronic or acute symptoms of vocal attrition (overall reduction of vocal capabilities, wear and tear of vocal mechanism) such as vocal fatigue, hoarseness, throat discomfort or pain and benign mucosal lesions. Sapir (1993)

It has been reported that the vocal symptom mainly seen in PVU is vocal fatigue. It is usually described as negative sensory vocal symptom that corresponds to change in vocal response, contrary to and usually quality or response. (Sataloff, 1933)

Western studies

Andrew James mac Donald et al. 2021 determined the prevalence of complementary and alternative medicine use in professional voice users. This study illustrated the substantial prevalence of CAMs can help clinicians navigate treatment strategies for this patient population.

OG Pavlikhin et al otorinolaringol 2017 conduct the comparitative assessment of the vocal function in the professional voice users and non-occupational voice users in the late adulthood.

The objective of the study was to evaluate the clinical and functional condition of the voice apparatus in the elderly patients and to elaborate recommendations for the prevention of the disturbances of the vocal function in the professional voice users. It is concluded that the majority of the disturbances of the vocal function in the professional voice users have the functional nature.

Shrestha, Kharel and Adhikary (2019) studied the prevalence of voice disorder in patients visiting the voice clinic ENT-HNS department of tertiary care center revealed that voice disorders were more frequent in females than males and also in professional voice users as they tend to use voice more daily.

Kim and Jaeock (2015) compared professional (Pro) and non-professional (Non-pro) voice users with voice disorders in self-reporting voice evaluation using Korean-Voice Handicap Index (K-VHI) and Korean-Voice Related Quality of Life (K-VRQOL) concluded that professional voice users are more sensitive to their functional and physical handicap resulted by their voice problems and that goes double for the patients with severe and neurologic voice disorders.

Indian studies

Sheyona and Devadas (2020) investigated the prevalence of self-reported voice problems and its impact on the nonprofessional voice users indicated that a significant number of nonprofessional voice users suffer from voice problems, and it has a significant impact on their job performance.

Boominathan, Rajendran, Nagarajan, Seethapathy and Gnanasekar (2008) described vocal abuse and vocal hygiene practices among different levels of professional voice users in India findings suggested that enable speech and voice pathologists to plan strategically to prevent voice problems and reach these voice professionals.

Ashkar and Kumaraswamy (2021) described vocal abuse and vocal hygiene practices among different level of non-professional voice users in kerala finding suggested that enable speech and voice pathologist to plan strategically to prevent voice problems in who is having poor vocal hygiene among traffic police, armed police and railway police.

Karulkar and Gunjawate (2021) explored the voice problems, vocal and non-vocal habits of Naradiya kirtankars findings highlighted the need for dedicated efforts towards increasing the awareness among the kirtankars' about the vocal, non-vocal factors associated with voice problems and the role of voice health-care professionals in voice care.

Karulkara, Ravi and Gunjawate (2020) aimed to profile voice-related complaints, as well as vocal and non-vocal habits among Hindustani classical singers highlighted the voice-related complaints and vocal and non-vocal habits of Hindustani classical singers.

Valson sheyona et al 2022 may, conduct a study about the prevalence and impact of voice problems in non-professional voice users; preliminary findings.

studies reporting the prevalence of voice problems in the non-professional voice users are rare. This the objective of that preliminary investigation was to explore

1-the prevalence of self-reported voice problems and

2-its impact on the non-professional voice users.

The result of this study that a significant number of NPVUs suffer from voice problems and it has a significant impact on their job performance. Hence, in future large scale, epidemiological studies are needed with randomly selected samples of different age groups, gender, income status, educational level, area of residence to understand the possible risk factors and impact of voice problem on the quality of life in general working and non-professional voice users in India.

Chendala chitguppi et al 2019 January, conduct a study that, is the voice of professional voice users with non-vocal cord lesion similar to that of non-professional voice users? The objective of this study was to analyse if

the voice of PUUs and PVUs with a longer duration of work experience shows the highest deviation from normative data.

Need for the study

In both professional and non-professional voice users, vocal hygiene habits play a crucial part in vocal usage. It is critical people who use their voice for a living practice good vocal hygiene habit, which can a consideration for non-professional voice users. The importance of self-reported voice problem and their impact on non-professional voice users can be seen in the above review. Although police (traffic, railway and armed) are non-professional voice users, vocal hygiene plays a significant part in them. The current study was motivated by a lack of literature concentrating on police officers voice hygiene routine.

III. METHOD

Aim of the study:

The purpose of this study was to assess the effectiveness of vocal hygiene awareness program for police officers (traffic police,armed police, railway police). This orientation material was utilized to evaluate it. A questionnaire was used to assess the orientation program (pre test and post test).

The current study was carried out in two phases:

Phase I

Orientation program

Phase II

Again, was carried out in three steps

1. Development of questionnaire
2. Administration of questionnaire
3. Carrying out sanitization program

PHASE I

ORIENTATION PROGRAM

An orientation program which was prepared on the material used in orientation material used in the following area.

PHASE II

Step I Development of questionnaire

. 25 questions (multiple choice) were divided in to following sections

- a) Demographic data
- b) Section A had questions related to anatomy of voice production mechanisms
- c) Section B had questions related to causes of the voice disorders
- d) Section C had questions related to preventive voice care.

Before being given to the target population, the generated questionnaire was given to a group of general public members who were asked to score the questions on intelligibility, simplicity, ambiguity, and language level. Their suggestions were taken into account, and necessary changes were made to the questionnaire. The questionnaire was then given to the target group before and after the orientation program to assess its efficacy.

Participants:

30 adults in the range of 20 to 40 working in police (10 traffic police, 10armed police,10 railway police) participated in the study. All participants were native Malayalam speakers and were from Kerala. All participants in the study were not having any speech and hearing and language problem.

Inclusion criteria

- No history of neurological, vascular and motor abnormalities
- Should be a native Malayalam speaker
- Age selected is to be specific for the testing

Exclusion criteria

- Non native Malayalam speaker

PROCEDURE

The data was gathered in the following manner.

Prior to the orientation program, the study's target group was briefed on the purpose of the program, which was to evaluate the orientation program's efficiency rather than their knowledge. After that, the target group was given a questionnaire, with special emphasis placed on not giving, and the group was also told not to discuss the

answers with colleagues while answering.
They had a ten-minute test for complete.

The questionnaire were gathered, and they were told that after the orientation session, they would be given another test (post test).

Following the administration of the post test, a brief conversation was held to clear their worries about the orientation lecture, which was provided utilizing audio-visual material as a supplement. Before post test was administered using the same questionnaire.

Scoring:

The responses got from 25 participants were separately scored for pre and post test. A score of 1 was given for correct response. And 0 was incorrect response. The obtained scores were tabulated and statistically analyzed for significant between pre and post test.

Analysis

The obtained data was statistically analyzed by using the method Fishers exact test.

IV. RESULT AND DISCUSSION

The aim of the current study was to evaluate the efficacy of vocal hygiene awareness program in police personal (traffic, railway and armed).

A. AWARENESS AND NON-AWARENESS OF VOCAL HYGIENE IN TRAFFIC POLICE PARTICIPANTS.

B.

Table 4.1

Shows the voice awareness in traffic police participants.

TRAFFIC POLICE

	YES		NO	
	COUNT	ROW N %	COUNT	ROW N %
Q1	8	80.00%	2	20.00%
Q2	0	0.00%	10	100.00%
Q3	0		10	100.00%
Q4	2	20.00%	8	80.00%
Q5	3	30.00%	7	70.00%
Q6	0	0.00%	10	100.00%
Q7	1	10.00%	9	90.00%
Q8	3	30.00%	7	70.00%
Q9	6	60.00%	5	50.00%
Q10	1	10.00%	9	90.00%
Q11	2	20.00%	8	80.00%
Q12	2	20.00%	8	80.00%
Q13	5	50.00%	5	50.00%
Q14	5	50.00%	5	50.00%
Q15	2	20.00%	8	80.00%
Q16	5	50.00%	5	50.00%
Q17	2	20.00%	8	80.00%
Q18	3	30.00%	7	70.00%
Q19	1	10.00%	9	90.00%
Q20	5	50.00%	5	50.00%
Q21	3	30.00%	7	70.00%
Q22	8	80.00%	2	20.00%
Q23	2	20.00%	8	80.00%
Q24	7	70.00%	3	30.00%
Q25	1	10.00%	9	90.00%

Table 4.1 shows the percentage of aware and not aware to the questions of vocal hygiene in traffic police participants.

1. Aware of vocal hygiene:

From the table it's clear that no one obtained 100%, above 70% (71-99) was obtained in three questions, above 50% (51-70) was obtained in five questions, above 10% (11-50) was obtained in nine questions, and above 5% (6-10) was obtained in three questions and 0% in three questions.

2. Not Aware of vocal hygiene:

From the table it's clear that 100% was obtained in three questions, above 70% (71-99) was obtained in ten questions, above 50% (51-70) was obtained in four questions, above 10% (11-50) was obtained in seven questions.

C. AWARENESS AND NON-AWARENESS OF VOCAL HYGIENE IN RAILWAY POLICE PARTICIPANTS.

Table 4.2

Shows the voice awareness in railway police participants.

RAILWAY POLICE					
		YES		NO	
		COUNT	ROW N %	COUNT	ROW N %
Q1		6	60.00%	4	40.00%
Q2		1	10.00%	9	90.00%
Q3		0	0.00%	10	100.00%
Q4		4	40.00%	6	60.00%
Q5		2	20.00%	8	80.00%
Q6		0	0.00%	10	100.00%
Q7		0	0.005	10	100.00%
Q8		3	30.00%	7	70.00%
Q9		4	40.00%	6	60.00%
Q10		2	20.00%	8	80.00%
Q11		5	50.00%	5	50.00%
Q12		2	20.00%	8	80.00%
Q13		3	30.00%	7	70.00%
Q14		5	50.00%	5	50.00%
Q15		0	0.005	10	100.00%
Q16		0	0.00%	10	100.00%
Q17		1	10.00%	9	90.00%
Q18		2	20.00%	8	80.00%
Q19		1	10.00%	9	90.00%
Q20		3	30.00%	7	70.00%
Q21		6	60.00%	4	40.00%
Q22		7	70.00%	3	30.00%
Q23		4	40.005	6	60.00%
Q24		5	50.00%	5	50.00%
Q25		1	10.005	9	90.00%

Table 4.2 shows the percentage of aware and not aware to the questions of vocal hygiene in Railway police participants.

1. Aware of vocal hygiene:

From the table it's clear that no one obtained 100%, above 50% (51-70) was obtained in three questions, above 10% (11-50) was obtained in thirteen, and above 5% (6-10) was obtained in four questions, and 0% in five questions.

2. Not Aware of vocal hygiene:

From the table it's clear that 100% was obtained in five questions, above 70% (71-99) was obtained in eight questions, above 50% (51-70) was obtained in six questions, above 10% (11-50) was obtained in six questions.

C. AWARENESS AND NON-AWARENESS OF VOCAL HYGIENE IN ARMED POLICE PARTICIPANTS.

Table 4.3

Shows the voice awareness in armed police participants.

	ARMED POLICE				
	COUNT	YES		NO	
		ROW N %	COUNT	ROW N %	
Q1	7	70.00%	3	30.00%	
Q2	2	20.00%	8	80.00%	
Q3	1	10.00%	9	90.00%	
Q4	2	20.00%	8	80.00%	
Q5	3	30.00%	7	70.00%	
Q6	0	0.00%	10	100.00%	
Q7	0	0.00%	10	100.00%	
Q8	2	20.00%	8	80.00%	
Q9	8	80.00%	2	20.00%	
Q10	0	0.00%	10	100.00%	
Q11	3	30.00%	7	70.00%	
Q12	2	20.00%	8	80.00%	
Q13	2	20.00%	8	80.00%	
Q14	4	40.00%	6	60.00%	
Q15	1	10.00%	9	90.00%	
Q16	2	20.00%	8	80.00%	
Q17	2	20.00%	8	80.00%	
Q18	1	10.00%	9	90.00%	
Q19	1	10.00%	9	90.00%	
Q20	6	60.00%	4	40.00%	
Q21	3	30.00%	7	70.00%	
Q22	5	50.00%	5	50.00%	
Q23	1	10.00%	9	90.00%	
Q24	7	70.00%	3	30.00%	
Q25	1	10.00%	9	90.00%	

Table 4.3 shows the percentage of aware and not aware to the questions of vocal hygiene in Armed police participants.

1. Aware of vocal hygiene:

From the table it's clear that s.no one obtained 100%, above 70% (71-99) was obtained in one question, above 50% (51-70) was obtained in three questions, above 10% (11-50) was obtained in twelve questions, and above 5% (6-10) was obtained in five questions and 0% in three questions

2. Not Aware of vocal hygiene:

From the table it's clear that 100% was obtained in three questions, above 70% (71-99) was obtained in thirteen questions, above 50% (51-70) was obtained in three questions, above 10% (11-50) was obtained in five questions.

D. COMPARENESS OF VOCAL HYGIENE AWARENESS AMONG THREE POPULATION.

Table 4.4
Shows significance among the 3 population

		COMPARISON			
		Testing proportion Z test p value			
Traffic Vs Railway		Traffic Vs Armed		Railway Vs Armed	
police		police		police	
0.342	NS	0.612	NS	0.645	NS
0.318	NS	0.153	NS	0.539	NS
	NS	0.318	NS	0.318	NS
0.342	NS	1	NS	0.342	NS
0.612	NS	1	NS	0.612	NS
	NS		NS		NS
0.318	NS	0.318	NS		NS
1	NS	0.612	NS	0.612	NS
0.383	NS	0.342	NS	0.085	NS
0.539	NS	0.318	NS	0.153	NS
0.177	NS	0.612	NS	0.373	NS
1	NS	1	NS	1	NS
0.373	NS	0.177	NS	0.612	NS
1	NS	0.658	NS	0.658	NS
0.153	NS	0.539	NS	0.318	NS
0.019	sig	0.177	NS	0.153	NS
0.539	NS	1	NS	0.539	NS
0.612	NS	0.278	NS	0.539	NS
1	NS	1	NS	1	NS
0.373	NS	0.658	NS	0.194	NS
0.194	NS	1	NS	0.194	NS
0.612	NS	0.177	NS	0.373	NS
0.342	NS	0.539	NS	0.139	NS
0.373	NS	1	NS	0.373	NS
1	NS	1	NS	1	NS

NS-No significance Sig – significance

From the table 4.4 the results suggest that there is significant difference for question number sixteen among the 3 population and non-significant difference was few for the other question.

DISCUSSION

The present review focuses on the evaluation of vocal hygiene awareness in police people. (Traffic police, armed police, railway police). The questionnaire was conducted among the police people and the result obtained was statistically analyzed to know the awareness of the vocal hygiene among the police people.

The objectives evaluated for the awareness of vocal hygiene in police people were:

1. AWARENESS AND NON-AWARENESS OF VOCAL HYGIENE IN TRAFFIC POLICE PARTICIPANTS.

- The percentage data for awareness of vocal hygiene in traffic police shows that no one obtained 100

percentage, above 70 percentage (71-99) was obtained in three questions, above 50 percentage (51-70) was obtained in five questions, above 10 percentage (11-50) was obtained in nine questions, and above 5 percentage (6-10) was obtained in three questions and 0 percentage in three questions.

- The percentage result for non-awareness of vocal hygiene in traffic police shows that 100 percentage was obtained in three questions, above 70 percentage (71-99) was obtained in ten questions, above 50 percentage (51-70) was obtained in four questions, above 10 percentage (11-50) was obtained in seven questions

2. AWARENESS AND NON-AWARENESS OF VOCAL HYGIENE IN RAILWAY POLICE PARTICIPANTS.

- The percentage data for awareness of vocal hygiene in railway police shows that no one obtained 100 percentage, above 50 percentage (51-70) was obtained in three questions, above 10 percentage (11-50) was obtained in thirteen, and above 5 percentage (6-10) was obtained in four questions, and 0 percentage in five questions.

- The percentage data for non-awareness of vocal hygiene in railway police shows that 100 percentage was obtained in five questions, above 70 percentage (71-99) was obtained in eight questions, above 50 percentage (51-70) was obtained in six questions, above 10 percentage (11-50) was obtained in six questions.

3. AWARENESS AND NON-AWARENESS OF VOCAL HYGIENE IN ARMED POLICE PARTICIPANTS.

- The percentage data for awareness of vocal hygiene in armed police shows that no one obtained 100 percentage, above 70 percentage (71-99) was obtained in one question, above 50 percentage (51-70) was obtained in three questions, above 10 percentage (11-50) was obtained in twelve questions, and above 5 percentage (6-10) was obtained in five questions and 0% in three questions

- The percentage data for non-awareness of vocal hygiene in armed police shows that 100 percentage was obtained in three questions, above 70 percentage (71-99) was obtained in thirteen questions, above 50 percentage (51-70) was obtained in three questions, above 10 percentage (11-50) was obtained in five questions

4. Comparison of vocal hygiene awareness among three population

- The findings indicate that there is significant difference for question number sixteen among the 3 population and non-significant difference was few for the other question. The result revealed that awareness on the vocal hygiene had to be provided for the police people which have to manage their profession using voice. The results of the present study are in correlation with study by Ashkar and Kumaraswamy (2021).

V. SUMMARY AND CONCLUSION

Current study is to compare vocal hygiene awareness in police personals.

And we compared the vocal hygiene among the 3 population such as:

Railway Police

Armed Police and

Traffic Police

and included members native language is Malayalam and age is in the range of 20-40 years

The study was conducted in the format of a questionnaire included data of pre and post awareness. Before the awareness program we gave participants to fill questionnaire.

After that we conducted the awareness program. The main goal of the program was to give a baseline awareness about voice, voice-production and voice hygiene among police personnel.

Professional speech and language pathologists gave them detailed sessions of the same.

After the detailed session of awareness again we provided the questionnaires to compare pre and post voice hygiene awareness.

In the questionnaire we included three sets of questions

1. Is the participants having any sort of voice problem or difficulties
2. If they are having any voice issues, the root cause for that
3. How much awareness they have about vocal hygiene

Police members are been doing vocal misuse more so they have high chance for getting vocal issues. At the end

of program, we gave a small session and tips for vocal hygiene, care and maintenance of voice hygiene, do's and don'ts to maintain voice hygiene.

In the above question arises are "yes" or "no" types and where 0 indicates incorrect answer and 1 for correct answer and analyzed the data statistically.

From this study, we can conclude that police members require more awareness about voice hygiene. Their vocal and non-vocal habits affect their voice. They should control their vocal and non-vocal habits for their better vocal hygiene. The current study is to compare vocal hygiene awareness in police personnel (railway police, armed police and traffic police) who are native Malayalam speakers in the age range of 20 – 40 years. Current study is an extension of the study by Ashkar and Kumaraswamy (2021) who described vocal abuse and vocal hygiene practices among non-professional voice users in Kerala and revealed that speech and voice pathologist can plan strategically to prevent voice problems and reach these non-voice professionals.

The awareness is not only for professional voice user rather it has same importance for non-professional voice users.

Speech and language pathologists should conduct a better awareness program which will improve their awareness towards voice hygiene and get knowledge how to prevent voice problems.

Implication of the study

The study helps to find the vocal hygiene awareness among the police people which include the population of railway police, armed policed and traffic police.

Limitation

- Population was limited

Further studies

- Add more number of population
- This study can be done in different professionals

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APPENDIX-I CONSENT FORM

CONSENT FORM

Student Researcher

Dear sir, I am a student doing my bachelor degree in Dr. M.V.Shetty college of speech and hearing, Mangalore. For the purpose of my research, I request you to take part in this study. The details of the study are given below.

Purpose of study:

The purpose of the study is to evaluate the efficacy of vocal hygiene awareness programme in persons working in police (railway police, armed police,traffic police).

Method:

Subjects between 20 to 40 years of age will participate in the study. Questions related to vocal hygiene will be asked. The entire study will be done using google forms.

The data of the study will be held in a secure location and destroyed completely after the study.

If you agree to participate in the study, please sign below.

- I hereby, consent to myself (whose name:) of which questions being asked through Google forms.
- I have read and understood the background information that you provide about the research.
- My participation is entirely voluntary and I can withdraw permission at any time.
- Yes I will be happy to provide answers to any questions you may have ask Regarding health and voice issues.
- No, I don't want to be disturbed.

Place:

Date:

Signature of participant:

Appendix –II

CASE HISTORY

DEMOGRAPHIC DATA:

NAME:

LOCATION:

AGE:

GENDER: MALE/ FEMALE

MARTIAL STATUS: MARRIED/ UNMARRIED

OCCUPATIONAL STATUS: RAILWAY POLICE/ ARMED POLICE/ TRAFFIC POLICE

1. ARE YOU AWARE OF VOCAL HYGIENE?
YES/NO
2. DO YOU HAVE ANY ISSUES RELATED TO VOICE?
YES/NO
3. HAVE YOU EVER BEEN DIAGNOSED WITH VOCAL DISORDER?
YES/NO
4. DO YOU EVER EXPERIENCED VOICE BREAKS DURING CONVERSATION?
YES/NO
5. DO YOU HAVE GASTRIC PROBLEMS?
YES/NO
6. HAVE YOU DONE ANY ENDOSCOPIC EVALUATION?
YES/NO
7. DO YOU FIND DIFFICULTY IN SWALLOWING?
YES/NO
8. DO YOU CONSUME CAFFEINE OFTEN?
YES/NO
9. DO YOU MAINTAIN PROPER HYDRATION LIKE DRINKING ATLEAST 8 -10 GLASSES OF WATER PER DAY?
YES/NO
10. DO YOU TRY TO WHISPER WHILE TALKING?
YES/NO
11. DO YOU TRY TO CLEAR YOUR THROAT FREQUENTLY?
YES/NO
12. DO YOU USE YOUR VOICE WITHOUT TAKING BREAK?
YES/NO
13. HAVE YOU EVER SMOKED?
YES/NO
14. DO YOU TAKE CARBONATED DRINKS?
YES/NO
15. DO YOU USE ANY TYPE OF RECREATIONAL DRUGS?
YES/NO
16. DO YOU EVER BEEN DRUNK?
YES/NO
17. DOES YOUR CHANGE IN VOICE ANNOY YOU?
YES/NO
18. ARE YOU AWARE OF VOICE DISORDERS AND VOCAL HYGIENE TIPS?
YES/NO
19. DO YOU PRACTICE OR FOLLOW THE VOCAL HYGIENE TIPS ?
YES/NO
20. DO YOU PREFER TO TAKE VOICE REST ?
YES/NO
21. DO YOU HAVE THE HABIT OF STEAM INHALATION?
YES/NO
22. DO YOU SCREAM OR SHOUT?
YES/NO
23. DO YOU SKIP MEALS?
YES/NO
24. DO YOU HAVE SPICY AND JUNK FOODS?
YES/NO
25. DO YOU SLEEP IMMEDIATELY AFTER DINNER?
YES/NO