

Common Voice Disorders among Bus Helpers in Dhaka City

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ABSTRACT

Background: There are approximately 9911 buses and 8515 minibuses are running within Dhaka city. Most of them have bus helpers who most of the time uses loud voice and yelling for their job. For which they are under a great risk of having voice disorder. No study was conducted to find the rate of voice disorder in this group. This study will seek out the rate of voice disorder and the risk among this group.

Materials and methods: A total of 80 bus helpers participated in the study. Their vehicle routes were within Dhaka city. It was a cross sectional survey. Sampling was done by convenience technique. Samples were selected from different bus depots in Dhaka city. Data were collected by face to face interview using a questionnaire. Data analysis was done by descriptive statistical analysis. Statistical Package for Social Science- 17 (SPSS) and Microsoft Excel 2007 were used for data analysis.

Results: The result shows that 84% of bus helpers had voice problem throughout their carrier. Current symptoms present among them are hoarseness (92%) vocal fatigue (73%), pain in throat (58%), constant throat dryness (67%) and frequent throat clearing (48%). Less frequent symptoms are breathy voice, strained voice, monotone voice, sore throat, acid taste and loss of voice. Only risk factor found is not drinking adequate water.

Conclusion: The study reveals that different types of Vocal disorders are very common among the bus helpers. So, preventive measures and education are necessary to get rid of this problem.

Key word: Voice disorder; Bus helpers; Occupational health.

Introduction

Voice is one of the most important elements of human being for communication. Because people mostly communicate with speech and without voice, they can't produce speech. In case of some people, voice is not only the way of communication but also a way of earning living. According to a study, people who earn their living by using their voice are called professional voice user. Advocate, teacher, singer, politician, street hawker, bus helper, news reader etc, are being considered as professional voice user. Among these professional voice users, some of them might have excess vocal load (eg. Advocate, hawker, teacher, singer and teacher) and some may not have (eg. News reader).¹

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In other countries there are many studies have been conducted on professional voice users to see the effect on their voice for the excessive vocal load and found that most of the professional voice users have voice problems.

Bus helper is one of the old occupations in Bangladesh. The main task of a bus helper is to assist the bus driver by constantly telling him what is happening to the left side of the bus to avoid unwanted accident. Another major job is calling people in different bus stoppages for giving them a trip. As mentioned before, there are approximately 9911 buses and 8515 mini buses and thousands of private car and other vehicles travelling all over the city every day. So the city is very much crowded. On the other hand, the city is also very much dusty which is not good for vocal hygiene. In this environment, bus helpers are working every day. For the sake of their job, they have to use loud voice or yelling constantly. According to Boon, this leads them to voice disorder.² From the observation of the investigator, most of the bus helpers are young in age and their monthly income is very low. So if they have voice problems or disorders in this age and if they can't do their treatment in time for lack of money, then that will lead to permanent voice disorder, which will be a burden for them for rest of the life. This permanent voice problem may affect their personal, occupational and social life.

There is negligible research conducted to determine the frequency of voice disorders among bus helpers both in Bangladesh and other countries. Some researchers have conducted work to see prevalence of voice disorder among general population and also other professions like teachers and singers.

According to Roy et al. performed a research on the prevalence of voice disorder and associated risk factors among teachers and general population in Iowa and Utah State in USA. The survey was conducted on 1243 teachers and 1288 non teachers. Among them, 11 % teachers and 6.2% non teachers had voice problem on the time of the study and 57.7% teachers and 28.8% non teachers had voice problem during their life time.³ Russell et al. investigated the prevalence of self reported voice problem among preschool teachers in South Australia. Here they identified how many teachers has voice problems during study period, how many had voice problem on the past year of the study and how many had voice problem at anytime in their teaching carrier.⁴ So it is proved that teachers are in high risk of having voice problems. From the observation of the investigator, bus helpers are working more time than teachers and the environment is so harsh than a class room. So, it can be assumed that bus helpers are at high risk of having voice disorder. Propose of this study was to find out the rate of voice disorder among bus helpers, frequency of symptoms.

Materials and methods

This was a cross-sectional, descriptive study conducted during the period August 2022 to July 2023. Population of the study was all bus and maxi helpers whose vehicle's route are within Dhaka city. Sample of this study was bus or maxi helpers at any age and without having or had neurological conditions and whose vehicle's route are within Dhaka city. Sample was selected from different bus stands in Dhaka city where intra city buses are depot. In this study, the investigator selected 80 samples. The investigator used convenience sampling to select sample, because by this technique, participants are selected according to their availability and willingness. Bus helpers are busy people. So that it was very difficult for the investigator to select sample randomly. Investigator found this method appropriate for this study.

Inclusion criterias

- Participants should be bus or maxi helpers of any age
- Their bus or maxi route should be within Dhaka city
- Must be in this job for at least 6 months
- Must work at least 30 hours per week.

Exclusion criterias

- People had any neurological disorders or diseases and traumatic voice injury
- Quit from this job for a long time
- Work as bus helper for less than 6 months.

The investigator started data collection with the help of the questionnaire which was modified after pilot study. The investigator went to different bus stands and conducted face to face interview of the bus helpers. Before starting the interview, the investigator took their consent and signature or finger print in the consent form. Data were collected from 80 respondents. Descriptive statistic analysis is the best way to analyze survey data. By this, the investigator can describe a huge number of information. In this study, the investigator collected different types of information like demographic information, information on risk factors related to voice disorder and information on present and past voice disorder and finally showed relationships among them. Descriptive statistic analysis was used in this research. The investigator used bar chart and chi square to show those relationships. For that, statistical package for social services (SPSS 17) and Microsoft Excel 2007 were used.

Results

For clarity and ease of understanding in this study, respondents currently experiencing a voice problem were designated as having a Current Voice Problem (CVP) those who had a voice problem in the past were marked as having a Voice Problem in the Past (VPP) and individuals with no history of voice problems were categorized as having No Voice Problem (NVP).

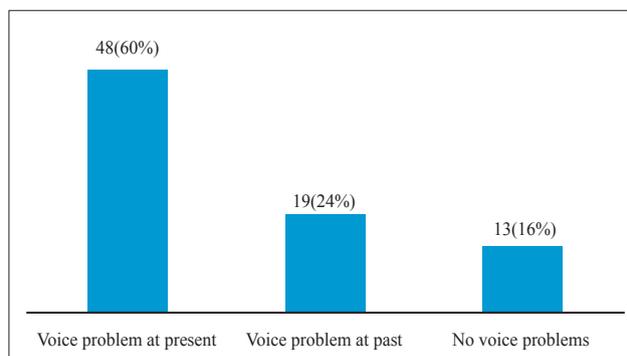


Figure 1 Voice Problem among the respondent bus Helpers (n =80)

Depicts that among the bus helpers, 48 (60%) had voice problem now and 13 (16%) were free from any voice disorder (Figure 1).

Among 80 participants 8% (n=4, CVP) were less than 15 years of age, 27% (n=13 , CVP), 32% (n=6, VPP)

and 31% (n=7, NVP) were 15 to 20 years, 19% (n=9, CVP), 32% (n=6, VPP) and 23% (n=3, NVP) were 20 to 25 years, 15% (n=7, CVP), 11% (n=2, VPP) and 15% (n=2, NVP) were 25 to 30 years and 31% (n=15, CVP), 26% (n=5, VPP) and 31% (n=4, NVP) were more than 30 years old.

Table I Association between age and voice disorder experienced by the bus helpers (n=80)

Age	Voice Problem		Total
	Yes	No	
Less than 15 years	4 (100%)	0	4
15 to 20 years	19 (82.61%)	4 (17.39%)	23
20+ to 25 years	15 (83.33%)	3 (16.67%)	18
25+ to 30 years	9 (81.82%)	2 (18.18%)	11
30+ years	20 (83.33%)	4 (16.67%)	24
Total	67 (83.75%)	13 (16.25%)	80

$\chi^2 = 0.834$, df= 4, p=0.934 (CV= 9.48).

It is disclosed from Table I, up to 20 years of aged helpers were 27 (33.75%). Out of 67 (83.75%) bus helpers who had voice disorder, 30 + years were 20 (29.85%) and 19 (28.36%) were of (15-20) years age. Among the 13 (16.25%) bus helpers who were free from voice disorders, 8 (61.54%) were of 30+ and (15-20) years age group. There is no significant association between ages of the respondents having voice disorder.

Table II Association between years of working and voice disorder experienced (n=80)

Duration of working	Voice Problem		Total
	Yes	No	
6 months to 1 year	8	0	8 (10%)
2 to 3 years	15	2	17 (21.25%)
4 to 5 years	9	4	13 (16.25%)
6 to 7 years	10	1	11 (13.75%)
more than 7 years	25	6	31 (38.75%)
Total	67	13	80 (100%)

$\chi^2 = 67.49$; df= ; CV =3.84

Out of 80 bus helpers less than 01 year job experienced, respondents were 8 (10%), 2-3 years job experience helpers were 17 (21.25%) and more than 7 years job experienced bus helpers were 31 (38.75%). There was significant association between working duration and voice disorder, when considered by Chi square test between groups. So More than 7 years job duration respondents had voice disorder which is highly significant (p<0.005) when compared to 2 to 3 years job duration (Table II).

Table III Symptom analysis of Bus helpers who had voice disorder (n=67)

Symptoms	CVP (Current Voice Problem)		VPP (Voice Problem at past)	
	Frequency (n=67)	Percentage	Frequency (n=67)	Percentage
Hoarseness	44	65.67%	18	26.86%
Voice fatigue	35	52.23%	13	19.40%
Pain in the throat	28	41.79%	12	17.91%
Breathy Voice	07	10.44%	05	7.4%
Stained Voice	08	11.94%	02	2.98%
Monotone Voice	05	7.4%	04	5.97%
Constant throat dryness	32	47.76%	15	22.38%
Frequent throat clearing	23	34.32%	12	17.91%
Sore throat	14	20.89%	04	5.97%
Acid Taste	10	14.92%	03	4.47%
Loss of Voice	07	10.44%	03	4.47%
Others	02	2.98%	01	1.49%

*Multiple responses by the respondents.

The result shows that participants more commonly suffered from hoarseness 65.67% (n=44, CVP) and 26.86% (n=18, VPP), vocal fatigue 52.23% (n=35, CVP) and 19.40% (n=13, VPP), constant throat dryness 47.76% (n=32, CVP) and 22.38% (n=15, VPP), frequent throat clearing 34.32% (n=23, CVP) and 17.91% (n=12, VPP), pain in throat 41.79% (n=28, CVP) and 17.91% (n=12, VPP), sore throat 20.89% (n=14, CVP) and 5.97% (n=4, VPP), strained voice 11.94% (n=8, CVP) and 2.98% (n=2, VPP) and breathy voice 10.44% (n=7, CVP) and 7.4% (n=5, VPP) (Table III).

Table IV Severity of voice problems among the Bus helpers (n=67)

Types of Voice Problem	Severe	Moderate	Mild	Total
CVP	16 (65.9%)	13 (19.4%)	19 (28.35%)	48
VPP	11 (16.4%)	3 (4.4%)	5 (7.4%)	19
Total	27 (40.29%)	16 (23.88%)	24 (35.82%)	67

Among the participants 28.35% (n=19, CVP) and 7.4% (n=5, VPP) reported the severity of their voice problem as mild, 19.4% (n=13, CVP) and 4.4% (n=3, VPP) as moderate and 65.9% (n=16, CVP) and 16.4% (n=11, VPP) as severe (Table IV).

Table V Voice problem sufferings frequency among Bus helpers (n=67)

Sufferings frequency	CVP	VPP	Total
Every day	04	01	05 (7.4%)
Every week	14	06	20 (29.85%)
Every month	09	03	12 (17.91%)
Can't mention	21	09	30 (44.78%)
Total	48	19	67

Among the 67 respondents suffering from voice problem, 5 (7.4%) suffer from voice problem every day, out of which 04 (80%) were CVP and 01 (20%) were VPP.

There was 20 (30%) weekly sufferers and 12 (18%) yearly sufferers and 30 (45%) could not mention about sufferings frequency, out of which 21 (70%) were CVP and 09 (30%) were VPP (Table V).

Discussion

The survey was conducted among 80 bus helpers. Among them 60% (n=48) participants reported having voice problem at present, 24% (n= 19) had voice problem at past (VPP), which implies 84% (n= 67) of bus helper had voice problem in past or present and 13 (16%) reported No Voice Problem (NVP). According to Cham et al. in 2012 study on prevalence of voice problem among primary school teachers in Singapore found that 19.5% teacher had voice problem.⁵ On the other hand in Miller et al. in 1995 study 64% teacher of singing had voice problem and in Roy et al. study 57% teacher has voice problem.^{6,3} So from the data it is very much clear that the rate of voice disorder among bus helpers is very high and this is alarming for the people in this type of profession.

In the study among CVP group participants more than 30 years of age suffer more voice problem than others and in VPP group participants within 15 to 20 and 20+ to 25 group suffers more voice problem. In Cham et al. study most of the teachers (40.7%) within 31- 40 years ages and in Roy et al. study 40-49 years ages were suffering more voice problem than other age groups on those studies.^{5,3} No significant relationship between age and voice disorder was found. Cham et al (2012), Ohlsson et al. and Rahman also found no relationship between these two variables but Roy et al. found relationship between them.^{5,3,7,8}

Participants who are working in this job for more than 7 years suffer more voice problem than others. In Cham et al. study participants who worked as teacher for 5-9 years suffered more voice problem than other groups in that study. There is relationship between duration of work and voice disorder (p=0.001). Miller et al. and Cham et al. also found no relationship between these

two variables.^{6,5} Both imply that probability of voice disorder increase among people who abuse their voice for long time for their job.

It is seen that most frequently occurring voice symptoms were hoarseness, vocal fatigue, pain in throat, constant throat dryness and frequent throat clearing. On the other hand less frequent symptoms were breathy voice, strained voice, monotone voice, sore throat, acid taste and loss of voice. In 1995 in a study of Miller et al. found that strained, harshness and effortful voice were most frequent. A study in Dhaka by Rahman disclosed that tired voice, weak voice and pain in the throat were more frequent and in Ohlsson et al. study on teachers strained, harshness, frequent throat clearing and pain in the throat were very common among the participants.^{8,7} So it is seen that harshness, frequent throat clearing and pain in the throat these three symptoms are quite frequent in both bus helpers and teachers.

Most of the participants 30 (44.78%) cannot say the pattern of their voice problem but among the participants who can tell the pattern were mainly suffer from voice problem in weekly basis (29.85%). On Ohlsson et al. study disclosed high percentage of suffering with voice problem in daily and weekly basis.⁷ So, analyzing the data except the participants who do not say the pattern, most of them suffer voice problem in weekly or monthly basis.

Conclusion

The result shows that most of the bus helpers have voice disorder (84% total) throughout their carrier where voice disorder is defined as if one's voice does not work, perform or sound normal and which interfere his normal communication at any time in his life, most occurring symptoms among them are harshness, vocal fatigue, pain in throat, constant throat dryness and frequent throat clearing and less frequent symptoms are breathy voice, strained voice, monotone voice, sore throat, acid taste and loss of voice. The result also shows that most of the bus helpers with voice disorder are more 30 years of age, works more than 50 hours per week, uses loud voice and yelling a lot in their work. The investigator hopes that these findings will help the policy makers to take necessary steps to reduce the rate of voice problem of this group of people and also through this study, speech and language therapy professionals will be benefited in both promotionally and provisionally.

Disclosure

All the authors declared no competing interests.

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