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RESEARCH ARTICLE

ATTITUDINAL RESPONSE TOWARDS TRAFFIC NOISE IN JAMMU CITY, J&K

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ABSTRACT

The present study has been carried out to assess the attitudinal response of the residents of Jammu city towards Traffic noise. The study area was divided into three sites: Site I (Crossings on the main highway), Site II (Crossings on the main roads connecting the highway) and Site III (Crossings with light vehicular traffic). A total of 300 respondents (150 males and 150 females) at each site were interviewed using questionnaire. The compilation of survey data of 900 respondents of study area revealed that all the respondents ranked Traffic noise as major source of noise in Jammu city. Gender wise differences in attitudinal response of all the respondents towards the traffic noise was found to be insignificant ($p>0.05$).

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INTRODUCTION

Traffic noise tends to be a dominant noise source in our urban as well as rural environment. Noise is the undesirable sound. One measure of noise pollution is the danger it poses to health. Therefore, any form of noise can be considered pollution if it causes annoyance, sleeplessness, fright or any other stress reaction. It may affect sleep, conversation, leading to perception of annoyance and causes hearing loss, cardiovascular problems as well as affecting task performance (Canter, 1996; Piccolo *et al*., 2005; Banerjee and Chakraborty, 2006). Health effects of noise include both the auditory as well as non-auditory effects. Many studies have been carried out to study these effects in different categories of population exposed to high intensity and frequencies of sound in their residences. Findings from a large body of studies show that traffic noise causes non-auditory stress effects such as changes in the physiological systems (e.g., elevated blood pressure), various cognitive deficits (e.g., poor sustained attention, memory/concentration problems), sleep disturbances, modifications of social behavior, psychosocial stress-related symptoms, and emotional/motivational effects (e.g., annoyance, learned helplessness) (e.g.,WHO, 2000; O¨ hrstro¨m, 2004; Babisch *et al*., 2005; Stansfeld *et al*., 2005; Bluhm *et al*., 2007). The present study has been carried out to assess the attitudinal response of the individuals of the study area towards traffic noise. The results were obtained from a questionnaire social survey.

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MATERIALS AND METHODS

The study area was divided into three sites: Site I (Crossings on the main highway), Site II (Crossings on the roads connecting the main highway) and SiteIII (Crossings with light vehicular traffic). The questionnaire was used to assess the response of individuals towards Traffic noise. About 300 individuals (150 males and 150 females) were interviewed from each site. The questionnaire included questions regarding the nature of problems/sufferings caused due to noise as well as rating of the sources of noise by individuals of the study area. Further overall opinion about the noise was assessed using the questionnaire.

OBSERVATION AND DISCUSSION

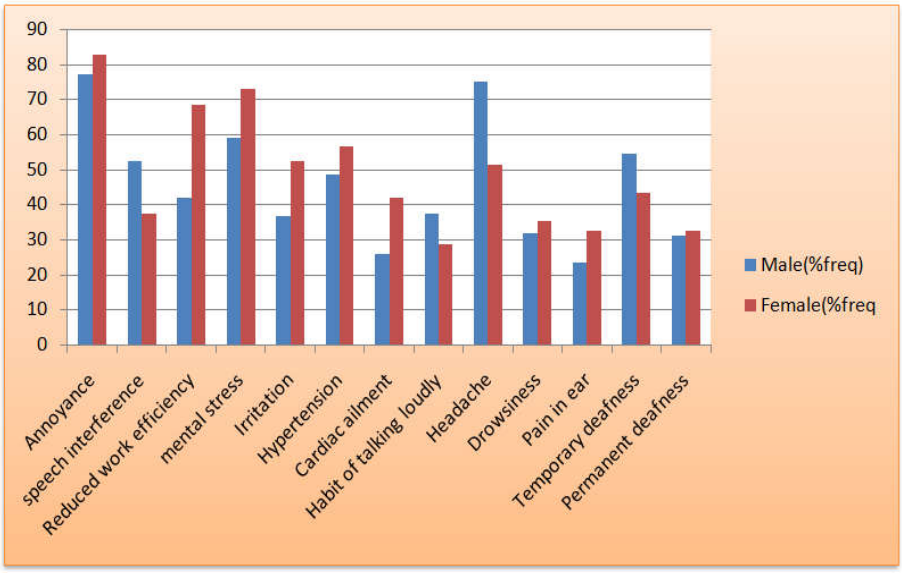
The analysis of the compiled data revealed that Traffic noise was ranked first by both the males and females of site I with mean score values 2.46 and 2.54 respectively whereas males and females of site II ranked Loudspeaker first with mean score values 2.23 and 2.54 respectively followed by Traffic Noise with mean scores 2.62 and 2.64 respectively.

Table 1. Attitudinal response of the individuals living near the three sites of the study area

S.No.	Question		People living near crossings on the main highway.(Site I)		People living near the crossings on the roads connecting the highway.(Site II)		People living on the roads with light vehicular traffic. (Site III)		Average Rank	
			Rank		Rank		Rank		Male (mean score)	Female(mean score)
			Male (mean score)	Female (mean score)	Male (mean score)	Female (mean score)	Male (mean score)	Female (mean score)		
1	Rank the sources of noise.	Loudspeaker Railway Industry Traffic oise/Horns Generator Banquet halls Bus stands	III(3.50) V(4.22) VI(4.46) I(2.46) IV(4.07) VII(4.60) II(2.92)	IV(3.64) VII(4.2) V(3.84) I(2.54) VI(4.01) III(3.58) II(3.16)	I(2.23) VII(5.56) VI(5.30) II(2.62) IV(4.15) V(4.50) III(3.87)	I(2.54) VII(5.44) VI(5.35) II(2.64) V(4.50) IV(4.34) III(3.16)	I(2.89) VII(5.03) VI(4) II(3.19) IV(3.53) V(3.80) III(3.42	II(2.92) VII(4.93) VI(4.90) I(2.78) III(3.24) IV(3.6) V(3.80)	II(2.87) VII(4.93) VI(4.58) I(2.75) IV(3.91) V(4.3) III(3.40)	II(3.03) VII(4.85) VI(4.69) I(2.65) V(3.91) IV(3.84) III(3.37)
2	How do you rank the noise level near the road?	Unbearable Annoying No effect Enjoyable	I(1.6) II(1.8) III(2.8) IV(3.7)	I(1.5) II(1.7) III(2.76) IV(3.6)	II(1.74) I(1.72) III(3.2) IV(3.72)	I(1.72) II(1.79) III(3.22) IV(3.73)	II(1.88) I(1.83) III(3.09) IV(3.49)	II(2.006) I(1.98) III(3.04) IV(3.41)	I(1.74) II(1.78) III(3.03) IV(3.63)	I(1.74) II(1.82) III(3) IV(3.58)
3	Rank your overall opinion about the level of noise?	Not at all disturbing Slightly disturbing Slightly uncomfortable Uncomfortable Highly annoying Very highly annoying Not at all acceptable	VI(5.28) V(5.03) VII(5.30) IV(3.65) I(2.53) II(2.68) III(2.95)	VII(5.25) V(4.86) VI(4.95) II(2.75) IV(4.06) I(2.60) III(3.14)	VII(5.24) V(3.266) VI(3.92) IV(3.260) I(2.54) II(2.73) III(3.14)	VII(5.32) VI(5.05) V(4.23) III(3.11) II(2.23) I(2.15) IV(3.42)	VII(4.86) V(4.32) VI(4.50) IV(4.04) II(2.86) I(2.63) III(3.97)	VI(4.96) VII(5.10) V(4.2) IV(3.97) III(3.17) I(2.52) II(3.18)	VII(5.12) V(4.20) VI(4.57) IV(3.65) I(2.64) II(2.68) III(3.53)	VI(5.17) V(5.00) VII(6.69) IV(4.91) II(3.15) I(2.42) III(3.24)

Table 2. Nature of Problems/sufferings caused due to noise

S.No.	Nature of problem/ suffering caused by noise.	People living near crossings on the main highway.(Site i)		People living near the crossings on the roads connecting the highway.(Site II)		People living on the roads with light vehicular traffic.(Site III)		Significance
		Rank		Rank		Rank		
		Male (% frequency)	Female (% frequency)	Male (%frequency)	Female (% frequency)	Male (% frequency)	Female (% frequency)	
1	Annoyance	77.33	82.66	80.66	89.33	55.33	50.66	0.83
2	Speech interference	52.66	37.33	36	33.33	12.66	17.33	0.75
3	Reduced work efficiency	42	68.66	38.66	61.33	15.33	12.66	0.46
4	Mental stress	59.33	73.33	72	78.66	49.33	38.66	0.82
5	Irritation	36.66	52.66	52.66	56.66	44	28.66	0.53
6	Hypertension	48.66	56.66	42.66	47.33	27.33	19.33	0.90
7	Cardiac ailment	26	42	12	19.33	11.33	8	0.57
8	Habit of talking loudly	37.33	28.66	31.33	27.33	18	22.66	0.67
9	Headache	75.33	51.33	80.66	57.33	56.66	62.66	0.15
10	Drowsiness	32	35.33	22	38	17.33	21.33	0.31
11	Pain in ear	23.33	32.66	14	23.33	8	16	0.24
12	Temporary deafness	54.66	43.33	37.33	42.66	6	7.33	0.93
13	Permanent deafness	31.33	32.66	23.33	16	4	2.66	0.84



1.72, 1.83 and 1.98

Fig.1. Graphical representation of sufferings of respondents of Site I

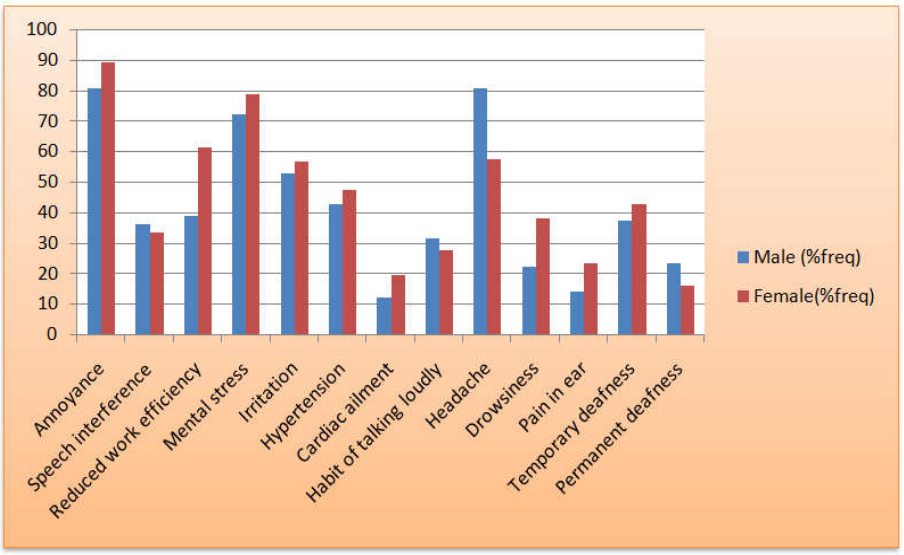


Fig.2. Graphical representation of sufferings of respondents of Site II

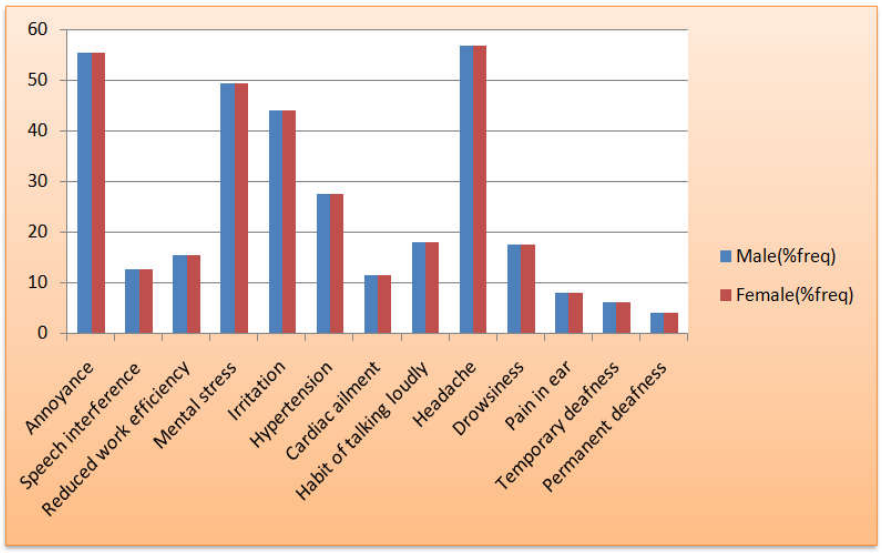


Fig. 3. Graphical representation of sufferings of respondents of Site III

This was due to presence of Temples and Banquet halls on the roads connecting the main highway. Further Loudspeaker was ranked first by males of site III with mean score value 2.89 and Traffic noise by females of site III with mean score value 2.78. On an average Traffic Noise was ranked first by both the males and females of the study area with mean score values 2.75 and 2.65 respectively. While ranking the noise level near the road, noise was ranked first unbearable for both the males and females of site I and females of site II with mean score values 1.6, 1.5 and 1.72 respectively whereas males of site II and both the males and females of site III ranked noise as annoying first with mean score values1.74, 1.88 and 2.006 respectively. On an average noise was ranked unbearable first for both the males and females of study area with mean scores 1.74 and 1.74 respectively.

Noise was highly annoying for males of site I(mean score 2.53) and II(mean score2.54) while it was very highly annoying for females of site I (mean score 2.60) and II(mean score 2.15) and all the respondents of site III(male mean score 2.63 and female mean score 2.52). Averagely males ranked noise as highly annoying as first rank (mean score 2.64) while females ranked very highly annoying as first rank(mean score 2.42).

While studying the nature of problems/sufferings faced by respondents due to noise (Table 2) it was found that the frequency of suffering from annoyance was reported to be highest in males and females of site I i.e. on crossings of national highway and site II ie. On crossings on the roads connecting the highway whereas highest frequency of suffering from Headache was reported for site III. Further it was observed that noise has insignificant differences in its effects gender wise i.e. gender plays no role while considering the effects of noise. This is clearly shown in Table 2 with $p>0.05$ for all the problems faced by the individuals of the study area.

Gaganija, Mkoma and Lema (2012) also carried out questionnaire based survey to observe the reaction of Morogoro, Tanzania residents towards Environmental Noise pollution and revealed that the main isolated noise source was traffic (51%) and the street noise (29%). Related to noise health and negative impacts 52% of the residents reported to have headache, 30.5% showed hearing problems, 27.6% sleeplessness, 28.9% conversation disruption and difficulty to concentrate.

Conclusion

From the above discussion it was concluded that Traffic noise was the major source of noise as observed in the study area. The present observation supports the study made by Gaganija, Mkoma and Lema (2012). Noise has serious health effects like annoyance, headache, cardiac ailments, drowsiness and many more. Further it was observed that noise has insignificant differences in its effects gender wise.

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