Bio-Science Research Bulletin
http://www.bpasjournals.com

Original Research Article

Print version ISSN 0970 0889
Online version ISSN 2320 3161
DOI: 10.5958/2320-3161.2020.00005.X
Vol. 36 No. 1, January-June 2020: P.33-39

Awareness Status of Noise Pollution in Samba Town of District Samba (Jammu & Kashmir): First Report

[1]Nazia Rasool
[2]Wahied Khawar Balwan*

Author's Affiliation:
[1]Coordinator, Environmental Sciences, Cluster University of Jammu, Jammu, Jammu and Kashmir 180001, India
[2]Department of Zoology, Govt. Degree (Postgraduate) College Bhaderwah, Jammu and Kashmir 182222, India.

***Corresponding Author:**
Dr. Wahied Khawar Balwan, Senior Assistant Professor, Department of Zoology, Govt. Degree (Postgraduate) College Bhaderwah, Jammu and Kashmir 182222, India.

E-mail:
wahied_kb@yahoo.co.in

Received on 15.02.2020
Accepted on 30.05.2020

ABSTRACT

The present study has been made to assess awareness status of Noise Pollution in Samba Town of District Samba (Jammu & Kashmir). The analysis of the compiled data regarding impact/awareness of noise revealed that majority of the respondents were having the knowledge of noise pollution and all the respondents of the study area were facing the problem of noise pollution. The sources of noise pollution identified by majority of the respondents at all the sites were traffic/vehicular noise, loudspeakers, construction activities, generators, shouting children, agricultural implements etc. Statistically insignificant ($p > 0.05$) difference of response between male and female respondents was observed. The study is first of its kind from the area.

KEYWORDS: Awareness, Impact, Noise, Respondents.

INTRODUCTION

At present, noise pollution is considered as one of the key problems which have numerous detrimental effects on both physical and social environment. Noise menace has negative bearing on both health and environment. Right from the inception of human civilization, noise has always been there but it was never so evident, so ubiquitous, so varied and as pandemic as it is seen in the first decade of this century. The effect of noise pollution is all-around and interconnected.

Many surveys have been carried out to assess the noise pollution status in many countries of the world including some cities in India. India is among the developing countries where urban environment has undergone significant changes due to industrialization, urbanization, expansion of the road network and the increase in the number of motor vehicles over the last 10 years (Dasarthy, 2013).These changes have resulted in an increase in noise levels that have added to many types of sufferings on humankind. WHO rated Delhi as 2nd noisiest city (World Economic Forum 2017). As per the survey, Delhi was the second worst city for noise pollution, followed by Cairo, Mumbai, Istanbul and Beijing. Dhole and Kadu (2018) while evaluating noise pollution in Washim town, Maharashtra also concluded that noise pollution was emerging as an environmental problem in Washim town and other parts of India. The people staying in noisy area especially above 70 dB (A) should take precautionary and protective measures in order to prevent themselves from noise induced hearing loss.

The present study has been made to assess awareness status of noise pollution in Samba Town; District Samba (J&K).Samba town is situated on range of Shivalik Hills alongside the National Highway 1A. In Samba town the public, commercial and industrial activities have increased day by day after notification of Samba tehsil as District and Samba town as District headquarter on 6th July 2006.This has led to overcrowding of area and increase in population density and number of motor vehicles.

MATERIAL AND METHOD

Noise pollution impact/awareness survey was conducted in Samba town by Questionnaire cum interview method using specific Questionnaire. During this survey, randomly selected 2000 i.e. 1000 males and 1000 females were interviewed by a specific format. Data was interpreted by using Mean score and percentage basis.

RESULTS AND DISCUSSION

The analysis of the compiled data regarding impact / awareness of noise revealed that majority of the respondents were having the knowledge of noise pollution and all the respondents of the study area were facing the problem of noise pollution. The sources of noise pollution identified by majority of the respondents at all the sites were traffic/vehicular noise, loudspeakers, construction activities, generators, shouting children, agricultural implements etc. Statistically insignificant ($p>0.05$) difference of response between male and female respondents was observed (Table1).Ismail and Ahmed (2018) after investigating the level of awareness about causes, impacts and solutions of noise pollution in Delhi concluded that the majority of educated youth was aware about noise pollution, its causes and probable health effects but hardly perceived noise pollution as environmental challenge and ranked it as the least important threat to the health and environment. Females were more sensitive as compared to males about noise pollution in Delhi. The study identified vehicular pollution as one of the most important cause of noise pollution and loud music as the second most important cause of noise pollution. Finally, the study suggested awareness campaign involving citizens and strict enforcement of environment laws. Chauhan and Pande (2010b) also reported that transportation and horn used in vehicles were the major sources of noise pollution in Dehradun City. Saadu*et al.* (1996) also reported road traffic, loudspeakers, radio etc. as the major source of noise. Moteallemi *et al.* (2018) while surveying the effects of noise pollution on residents of the Samen district in Mashhad revealed traffic noise was reported as the most important source of noise pollution. Singh and Davar (2004) while surveying the problem of noise pollution in the wake of its ill effects on the life of the people in Delhi State pointed out various adverse health effects caused by noise pollution.

67.3% of males and 78% of females reported that during 12-18 hours, they used to experience more noise pollution. Only few of the respondents were experiencing noise pollution during 18-24 hours and only 2.5% experienced noise pollution during 0-6 hours. Majority of the respondents at the site reported 'No disturbance' during sleep at night (Table1).On contrary, Weyde *et al.* (2017) studied the effect of noise on children during night in Norway and found a statistically significant association between road traffic noise and sleep problems in girls in study area. Further analysis revealed, statistically insignificant($p>0.05$) difference of response between male and female respondents regarding sleep disturbance due to noise.

29.7% of males and 65% of females reported to face most of the noise at workplace followed by respondents facing noise at residence which was followed by the noise during commutation and least reported noise at recreational spots.70% of the respondents (80% of male respondents and 60% of female respondents) reported that outdoor noise was the main source of noise (Table 1). On contrary, Nagi *et al.* (1993) reported that urban families experienced more noise nuisance from interior sources.

31.4% of the respondents in the study area were reported to be mostly suffering from annoyance due to noise followed by headache(30.4%), fatigue (19.8%), Lack of concentration (13%) and high blood pressure (5.4%) (Table 1). Moteallemi *et al.* (2018) while surveying the effects of noise pollution on

residents of the Samen district in Mashhad also revealed that noise pollution caused nervousness (29.1%), conversation problems (19.8%), amnesia (18.3%), loss of concentration (12.8%) and annoyance (54.8%). Statistical analysis revealed significant ($p > 0.05$) difference of response between male and female respondents regarding problem mostly faced due to noise. Bluhm *et al.* (2007) found association between road traffic noise and hypertension and found that about 13% of subjects in the whole study population were diagnosed with hypertension. Van and Babisch (2012) while reviewing relevant literature on road traffic noise exposure and the prevalence of hypertension up to 2010 concluded that increase in the risk of hypertension increased with the road traffic noise level. Ouis (2001) also reported annoyance to be the first and foremost effect of road traffic noise in addition to non-auditory effects. Singh *et al*. (2018) also concluded that traffic noise caused irritation and annoyance, sleep disturbances, cardiovascular disease, risk of stroke, diabetes, hypertension and loss of hearing.

Majority of the respondents (81.2% of male respondents and 70% of female respondents) at the site rated the level of noise near the road as annoying (Table 1). Dratva *et al.* (2010) studied the impact of road traffic noise on the quality of life and observed that thirteen percent of the study population reported high annoyance due to traffic. Mohapathra *et al.* (2012) also established the relationships between annoyance and traffic noise among residents, general public and shop owners with the help of correlation analysis.

Majority of the respondents (75.2% of male respondents and 44% of female respondents) reported light vehicle as the most disturbing category of vehicle. Statistical analysis revealed significant ($p<0.05$) difference of response between male and female respondents regarding category of vehicle causing more disturbance (Table 1). Srivastav *et al.* (1986) observed that automobiles specifically auto rickshaws were the major source of noise in Ahmedabad.52.2% of the respondents in the study area stated that music players inside buses should be used with restrictions and 45.8% of the respondents stated that music players inside buses should be banned.

Majority of the respondents (97% of male respondents and 94% of female respondents) at the sites reported that restrictions on the use of horns near educational institutes and hospitals should be strictly enforced. Statistical analysis revealed significant ($p<0.05$) difference of response between male and female respondents (Table 1). Rao and Rao (1990) reported that air horns used by motor vehicles were the most important factor contributing highly to noise pollution. Majority of the respondents (90.5% of respondents) at all the sites had never used the ear plugs/muffs. So they needed proper awareness regarding noise induced hearing loss. Majority of the respondents were observed to be unaware about the environmental laws pertaining to noise and had never lodged complaint about a neighbour being too noisy. Majority of the respondents (50% of male respondents and 99% of female respondents) at the sites of the study area reported that noise affected them most during the summer season (Table 1).

Table1: Noise impact and awareness survey in study area (Samba Town)

S. No.	Characteristics	Percentage of Respondents		
		Male	**Female**	**Total**
1.	Knowledge of Noise Pollution			
	a) Yes	88.1%	81%	84.55%
	b) No	11.9%	19%	15.45%
2.	Problem of Noise Pollution			
	a) Yes	100%	100%	100%
	b) No	0%	0%	0%
3.	Noise Pollution is experienced			
	a) 0-6 hours	1%	4%	2.5%
	b) 6-12 hours	19.8%	17%	18.4%
	c) 12-18 hours	67.3%	78%	72.65%
	d) 18-24 hours	11.9%	1%	6.45%

S. No.	Characteristics	Percentage of Respondents		
		Male	Female	Total
4.	Disturbance during sleep at night			
	a) Yes	32.7%	39%	35.85%
	b) No	67.3%	61%	64.15%
5.	Noise mostly faced at			
	a) At residence	64.4%	29%	46.7%
	b) At workplace	29.6%	65%	47.35%
	c) During commutation	5%	4%	4.5%
	d) Recreational spots	1%	2%	1.5%
6.	Most affecting source of noise			
	a) Indoor	20%	40%	30%
	b) Outdoor	80%	60%	70%
7.	Mostly faced due to noise			*
	a) Annoyance	23.8%	39%	31.4%
	b) Lack of concentration	3%	23%	13%
	c) Headache	33.8%	27%	30.4%
	d) Fatigue	29.6%	10%	19.8%
	e) Increased pulse rate	9.8%	1%	5.4%
8	Noise level near the road			
	a) Unbearable	18.8%	30%	24.4%
	b) Annoying	81.2%	70%	75.6%
9.	Most disturbing category of vehicle			*
	a) Heavy Vehicle	24.8%	56%	40.4%
	b) Light Vehicle	75.2%	44%	59.6%
10.	Music players inside buses should be			
	a) Banned	42.6%	49%	45.8%
	b) Allowed to continue	0%	4%	2%
	c) Used with restrictions	57.4%	47%	52.2%
11.	Restrictions on the use of horns near educational institutes and hospitals be strictly enforced			
	a) Yes	97%	94%	95.5%
	b) No	3%	6%	4.5%
12.	Ear plugs/muffs used ever			
	a) Yes	5%	14%	9.5%
	b) No	95%	86%	90.5%
13.	Awareness about environmental laws pertaining to noise			*
	a) Yes	50.5%	29%	39.75%
	b) No	49.5%	71%	60.25%
14.	Lodged Complaint ever about a neighbour being too noisy			
	a) Yes	2%	5%	3.5%
	b) No	98%	95%	96.5%
15.	Season of the year in which noise affects the most			
	a) Rainy season	40	1%	20.5%
	b) Summer season	50%	99%	74.5%
	c) Winter season	10%	0%	5%

Further analysis of data of ranking of outdoor sources of noise pollution revealed that traffic noise/horns secured 1st Rank with mean score of 1.47 and post offices secured XIIth Rank with mean score of 10.58 in the study area (Table 2). Kaushal and Rampal (2016), Moteallemi *et al.* (2018) while

assessing the attitudinal response of the residents towards traffic noise reported traffic noise as the main source of noise pollution. Thangadurai *et al.* (2005) also reported traffic noise as major contributor to annoyance. Statistically insignificant difference ($p<0.05$) was observed between male and female response regarding ranking of outdoor sources of noise pollution.

Table 2: Mean Rank of Outdoor Sources of Noise in Study Area (Samba Town)

S. No.	Sources	Males (I)		Females (II)		Overall (III)	
		Mean score	Rank	Mean score	Rank	Mean score	Rank
1.	Market Noise	2.95	II	3.05	III	3.0	II
2.	Loudspeakers	9.88	XI	8.53	XII	9.21	X
3.	Traffic noise/horns	1.64	I	1.29	I	1.47	I
4.	Generators	4.75	IV	6.58	IV	5.67	IV
5.	Banquet Halls	6.56	VII	5.71	IX	6.14	VI
6.	Restaurants	6.88	VIII	7.98	VIII	7.43	IX
7.	Industry	3.45	III	3.26	II	3.36	III
8.	Automobile workshops	7.07	IX	6.65	V	6.86	VII
9.	Bus Stands	6.2	V	5.29	VI	5.75	V
10.	Banks	9.87	X	10.76	X	10.32	XI
11.	School/Colleges	6.51	VI	7.31	VII	6.91	VIII
12.	Post Offices	10.38	XII	10.77	XI	10.58	XII

Whereas analysis of data of ranking of indoor sources of noise pollution revealed that television secured Ist Rank with mean score of 2.51and Stove secured XVth Rank with mean score of 10.92 (Table 3). Statistically significant difference ($p < 0.05$) was observed between male and female response regarding ranking of indoor sources of noise pollution.

Table 3: Mean Rank of Indoor Sources of Noise in the Study Area (Samba Town)

S. No.	Sources	Males (I)		Females (II)		Total (III)	
		Mean Score	Rank	Mean Score	Rank	Mean Score	Rank
1	Television	3.05	III	1.97	I	2.51	I
2.	Cooler	8.53	XIII	7.71	VI	8.12	X
3.	Air Conditioner	1.4	II	13.96	XV	7.68	VIII
4.	Music gadgets	6.58	VIII	2.63	II	4.61	III
5.	Pressure Cooker	5.71	VII	5.77	V	5.74	V
6.	Telephone Ring	7.98	XI	9.49	X	8.74	XIII
7.	Fan	3.26	V	10.56	XI	6.91	VI

8.	Exhaust Fan	6.65	IX	8.95	IX	7.80	IX
9.	Refrigerator	5.29	VI	11.94	XIV	8.62	XII
10.	Mixer/Grinder	10.76	XIV	4.5	III	7.63	VII
11.	Alarm Clock	7.30	X	10.74	XII	9.02	XIV
12.	Stove	10.77	XV	11.06	XIII	10.92	XV
13.	Washing Machine	3.06	IV	7.8	VII	5.43	IV
14.	Door Slamming	8.52	XII	8.01	VIII	8.27	XI
15.	Talking/shouting	1.29	I	4.66	IV	2.98	II

CONCLUSION

It is the need of the hour to take preventive measures and effective mitigation strategies so as to save residents of Samba from the detrimental effects of noise menace which can be controlled to a greater extent at all three stages namely (a) At source (b) during transmission and (c) at the receiver.

REFERENCES

1. Bluhm, G.L., Berglind, N., Nordling, E. and Rosenlund, M., 2007. Road traffic noise and hypertension. Occupational and Environmental Medicine, 64(2):122–126.
2. Chauhan, A., Pawar, M., Kumar, Dharmendra, M., Shukla, S.K., Bainola, P.K., Gupta, M.K. and Chauhan, S.P.S., 2010b. Assessment of noise level in different zones of Haridwar City, Uttarakhand. Researcher, 2 (7): 56-59.
3. Dasarthy. A.K., 2013. Noise pollution in Chennai: A case study. Asia Pacific Journal of Research, I (XI):143-148.
4. Dhole, A. D. and Kadu, P.A (2018). Study of Noise Pollution in Washim Town. International Journal of Engineering Sciences & Research Technology, 7(4):137-143.
5. Dratva, J., Zemp, E., Felber, D.D., Bridevaux, P.O., Rochat, T., Schindler, C. and Gerbase, M.W., 2010. Impact of road traffic noise annoyance on health-related quality of life: results from a population-based study. Quality of Life Research, 19(1):37-46.
6. Ismail, S. and Ahmed, S. (2018). Noise pollution, its sources and effects: A Case study of University students in Delhi. International journal of Economic and Business Review, 6(2):15-23.
7. Kaushal, A. and Rampal, R.K., 2016. Attitudinal response towards traffic noise in Jammu city, J&K. International Journal of Current Research, 8(4):29093-29096.
8. Mohapathra, S.S., Basankopp, M. and Shrihari, S., 2012. Public Reception and Response to Traffic Noise Induced Annoyance: A Case Study at Mangalore, India. Research Bulletin, 21(2): 39-50.
9. Moteallemi, A., Bina, B. and Mortezaie,S., 2018. Effects of noise pollution on Samen district residents in Mashhad city. Environmental Health Engineering and Management Journal, 5(1): 23–27.
10. Nagi, G, M.K. Dhillon, M.K. and Dhaliwal , G.S., 1993. Sources of noise pollution and its effects on rural and urban inhabitants. Indian Journal of Ecology, 20(1): 67-73.
11. Ouis, D., 2001. Annoyance from road traffic noise: A Review. Journal of Environmental Psychology, 21(1): 101-120.
12. Rao, P.R. and Rao, M.G.S., 1990. Traffic noise pollution in the city of Vishakhapatnam. Scavenger, 9-13.
13. Saadu, A.A., Onyeonwu, R.O., Ayorinde, E.O. and Ogisi, F.O., 1996. Community attitudinal noise survey and analysis of eight Nigerian cities. Applied Acoustics, 49 (1): 49-69.
14. Singh, D., Kumari, N.and Sharma, P., 2018. A review of adverse effects of road traffic noise on human health. Fluctuation and Noise Letters, 17:12 pages.
15. Singh, N. and Davar, S.C., 2004. Noise Pollution – Sources, effects and control. Journal of Human Ecology, 6 (3): 181-187.
16. Srivastav, J.P., Shah, R.K. and Desai, M.N., 1986. Noise pollution in Ahmadabad City. Journal of Acoustical Society of India, 14(2): 41-47.

17. Thangadurai, N., Ravichandran, C. and Meena, K., 2005. Environmental noise pollution in Salem, Tamil Nadu. Indian Journal of Industrial Pollution Control, 21(2): 347-354.
18. Van, K.E. and Babisch, W., 2012. The quantitative relationship between road traffic noise and hypertension: a meta-analysis, Journal of Hypertension, 30(6): 1075– 1086.
19. Weyde, K. V., Krog, N.H., Oftedal, B., Evandt, J., Magnus, P., Overland, S., Clark, C., Stansfeld, S. and Aasvang, G.M., 2017. Nocturnal road traffic noise exposure and children's sleep duration and sleep problems. International Journal of Environmental Research and Public Health, 14(5): 491.
20. World Economic Forum, 27th March 2017. https://www.weforum.org/agenda/2017/03/these-are-the-cities-with the-worst-noise-pollution.