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AN ASSESSMENT OF THE KNOWLEDGE AND AWARENESS STATUS OF NOISE POLLUTION AMONG THE RESIDENTS OF POONCH TOWN OF JAMMU AND KASHMIR, INDIA

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Abstract

The present study has been conducted to measure awareness status of Noise Pollution among the population of Poonch Town of Jammu and Kashmir, India. The result of the generated data regarding impact/awareness of noise pollution revealed that majority of the respondents were having the knowledge of noise pollution and were confronting the problem of noise pollution. According to the majority of respondents, vehicular/traffic noise loudspeakers, construction and commercial operations, generators, agricultural implements, and other sources were the main causes of noise pollution in the area. Noise has an impact on a person's overall wellbeing and is a potential risk to one health, both physically and psychologically. Therefore it is the need of the hour to take preventive measures and effective mitigation strategies so as to mitigate the detrimental effects of noise menace. The difference in responses between male and female respondents was statistically insignificant ($p > 0.05$).

Key words: Noise, awareness, knowledge, study, respondents.

Introduction

Since the beginning of human civilization, noise has existed, but it has never been as noticeable, pervasive, diverse, and widespread as it is in the first decade of this century. Noise is created by sound, and when it reaches higher and higher pitches with loudness that the human ear cannot handle, it becomes undesired and is referred to as noise. The World Health Organization (WHO) has declared noise as the third most hazardous pollution after air and water in large cities [1]. So threats from noise pollution on human health cannot be ignored anymore. Humans are gradually affected by noise, which can eventually lead to permanent hearing, various serious illnesses, or even death with sudden noise exposure. Over 160 dB of noise causes the tympanic membrane to tear, which leads to hearing loss. Scientific experiments have provided strong evidence that adults may experience psychological dissonance as a result of uncontrollable noise effects. Numerous psychological disorders, such as changes in work tactics, issues of concentrating, inducement, etc., can be brought on by noise [2].

In several nations around the world, including some Indian cities, numerous assessments have been conducted to evaluate the level of noise pollution. India is one of the emerging nations where the urban environment has changed significantly over the few decades as a result of urbanization, industrialization, road network growth, and the rise in motor vehicle traffic [3]. Noise levels have increased as a result of these developments, contributing to a variety of human

miseries. Delhi ranked second in terms of noise pollution, behind Cairo, Mumbai, Istanbul, and Beijing [4]. In an assessment of noise pollution in Washim town, Maharashtra, it has been found that noise pollution was becoming an issue for the environment and residents of the area [5]. To avoid noise-induced hearing loss, those who live in noisy areas, particularly those with decibel levels exceeding 70 dB (A), should adopt preventative and protective measures. Poonch is town of Jammu province of Jammu and Kashmir, UT and is swiftly moving toward urbanization. A lot of noise has been observed in the area as a result of different institutional, commercial, and development activities. Keeping this in view, the present study has been made to assess awareness status of noise pollution among the residents of Poonch Town of Jammu and Kashmir, India.

Material and methods

Study area

Poonch is a semi-urban district of Jammu and Kashmir (UT), India and is geographically located within 33.770 N Latitude and 74.10 E longitudes. Poonch district has a total area of 1,674 square kilometres and lies within the foothills of Pir Panjal range in Western Himalayas at an average elevation of 1,021 meters above sea level. Poonch town is located on the bank of the Poonch River and comprised of 17 wards with a population of 26,854, including 10,791 females and16, 063 males.

Data Collection and Analysis

The study was based on field surveys and personal observations. A small-scale questionnaire survey was used to collect data on the impact and awareness of noise pollution in the town.

During this survey, 600 respondents including 300 males and 300 females were randomly selected and interviewed by a specific format. They were asked a few questions regarding noise and its implications and their answers were recorded in survey documents. Data was interpreted by using mean score and percentage basis.

Result and Discussion

The results of the responses are calculated in the form of percentage and are shown in the table 1. The results of the analysis of the collected data revealed that most of the respondents in the study area were aware of the problems of noise pollution and were affected by it. It has been found that traffic/vehicular noise, loudspeakers, construction activities, workshops, commercial activities, generators, shouting children, school/college and agricultural implements are the identified sources of noise pollution in the area. The difference between the responses of male and female respondents was statistically insignificant ($p>0.05$) (Table1).

64.1% of the respondents in the study area are aware of noise pollution and its effects (68.1% male and 61% female). According to 68.6% of the respondents (69.2% of the male respondents and 68% of the female respondents), they used to experience severe pain during the 12–18 hour period. Few respondents reported noise pollution during the 18–24 hour period, and only 6% reported noise pollution during the 0–6 hour period. The majority of respondents (56.7%) stated that they feel no disturbance in their sleep due to noise during the night hours (Table 1). On the other hand, statistically significant correlation between sleep issues and road traffic noise was

observed in an investigation of noise pollution in Norway [6]. Further analysis also revealed a statistically insignificant ($p>0.05$) difference of response between male and female respondents regarding sleep disturbance due to noise.

58.2% of respondents (51.4% of males and 65% of females) reported experiencing the most noise at their residence, followed by their workplace, commuting, and recreational areas, and 65.5% reported that outdoor noise was the primary source of noise pollution (Table 1). However, in contrary to this it has been found that urban families experienced more noise nuisance from indoor sources [7]. 38.9% of respondents in the study area reported noise-related annoyance, followed by headache (30.5%), lack of focus (16%), fatigue (13.1%), and higher blood pressure (3.7%) [8, 9, and 10]. Traffic noise also causes irritation and annoyance, sleep disruptions, cardiovascular illness, stroke risk, diabetes, hypertension, and hearing loss [11, 12]. The majority of respondents (71.2% of males and 68% of females) found the level of noise near the road irritating [13, 14].

The majority of respondents (77.2% of males and 58% of females) identified light vehicles as the most distressing type of vehicle [15]. Table 1 shows a substantial ($p<0.05$) difference in response rates between male and female respondents for the type of vehicle producing the most disruption.

The majority of responders (92% male and 94% female) during the study agreed that limits on the use of horns near/ in silence zone should be severely enforced. Male and female respondents had significantly different responses ($p<0.05$) (see Table 1). Motor vehicle pressure horns are the most significant source of noise pollution [16]. The majority of the respondents across the study area had never used ear plugs/muffs. As a result, they needed to be more aware of noise-induced hearing loss. The majority of respondents were found to be unaware of noise-related environmental regulations and had never filed a complaint against a noisy neighbour. 59.65% of respondents (57.2% of males and 62.1% of females) at the study area reported that noise causes psychological difficulties.

Table1: Noise impact and awareness survey in Poonch Town of Jammu and Kashmir

S.No	Characteristics	Percentage of responses		
		Males	Females	Total
1.	Knowledge of Noise Pollution a) Yes b) No	 68.1% 31.9%	 61% 39%	 64.55 % 35.45 %
2.	Problem of Noise Pollution a) Yes b) No	 95% 5%	 90% 10%	 92.5% 7.5%
3.	Hours of Noise Pollution experienced			

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	a) 0-6 hours	5%	7%	6%
	b) 6-12 hours	18.2%	17%	17.6%
	c) 12-18 hours	69.2%	68%	68.6%
	d) 18-24 hours	7.6%	8%	7.8%
4.	Disturbance during sleep at night			
	a) Yes	54.2%	32%	43.1%
	b) No	45.8%	68%	56.9%
5.	Noise mostly faced at			
	a) At residence	51.4%	65%	58.2%
	b) At workplace	32.3%	29%	30.65
	c) During commutation	9.3%	4%	%
	d) Recreational activities	7%	2%	6.65%
				4.5%
6.	Most affecting source of noise			
	a) Indoor	25%	44%	34.5%
	b) Outdoor	75%	56%	65.5%
7.	Common problems faced due to noise			
	a) Annoyance	28.8%	49%	38.9%
	b) Lack of concentration	10.2%	22%	16.1%
	c) Headache	34.1%	26%	30.5%
	d) Fatigue	23.2%	3%	13.1%
	e) Increased blood pressure	3.7%	-----	3.7%
8.	Noise level near the road			
	a) Annoying	71.2%	68%	69.6%
	b) Unbearable	28.8%	22%	30.4%
9.	Most disturbing category of transport vehicle			
	a) Heavy Vehicle	22.8%	42%	32.4%
	b) Light Vehicle	77.2%	58%	67.6%
10.	Restrictions on the use of horns in silence zone be strictly enforced	92%	94%	93%
	a) Yes	8%	6%	7%
	b) No			
11.	Ear plugs/muffs used ever			
	a) Yes	6%	14%	10%
	b) No	94%	86%	90%
12.	Knowledge and Awareness about environmental laws pertaining to noise			
	a) Yes	40.5%	28%	34.25
	b) No	59.5%	72%	%
				65.75

				%
13.	Psychological disturbance due to noise a) Yes b) No	57.2% 42.8%	62.1% 37.9%	59.65 % 40.35 %

Data on outdoor and indoor sources of noise pollution (Fig 1 and 2) revealed that traffic noise/horns are the most significant sources of outdoor noise pollution as stated by the respondents, followed by commercial areas, mini-industrial areas, bus stops, schools/colleges, and vehicle workshops, among others [17,18].

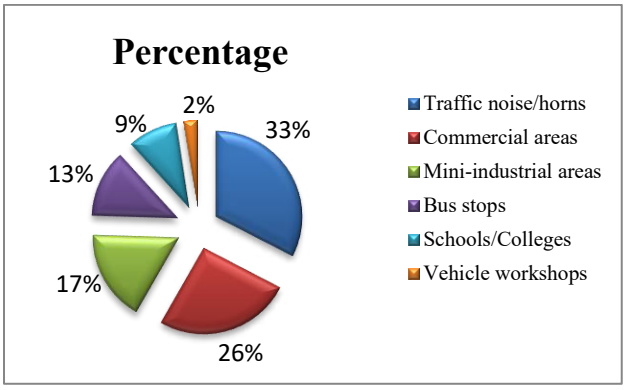

Fig 1: Outdoor sources of Noise Pollution

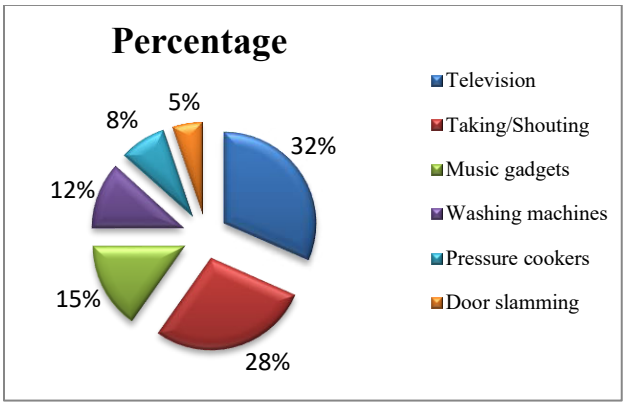

Fig 2: Indoor sources of Noise Pollution

Analysis of data on the ranking of indoor sources of noise pollution revealed that television is the most common source of noise, followed by talking, shouting, music gadgets, washing machines, pressure cookers and door slamming, among other things as stated by the respondents (Fig.2).

Conclusion

From the study it became evident that traffic/vehicular noise, loudspeakers, construction activities, commercial activities, generators, agricultural implements etc. are the main source of

noise pollution in the area. Noise has an impact on a person's overall wellbeing and is a potential risk to one health, both physically and psychologically. It is the need of the hour to take preventive measures and effective mitigation strategies so as to mitigate 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 level.

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