THE EFFECTS OF TRAFFIC NOISE POLLUTION ON AUTO-DRIVER'S HEALTH IN SELECTED AUTO-ROUTES: THE CASE OF KOLKATA MUNICIPAL CORPORATION

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ABSTRACT

The growing menace of noise pollution is one of the crucial environmental issues in modern era across the world. This is a silent killer of the physical as well as psychological health of human being. The existing findings in Indian context show that Kolkata is amongst the polluted city primarily because of high population base and growing surface transportation system. In the light of this, the present study addresses the main source of noise pollution viz. traffic noise pollution and its likely impact upon the occupationally exposed public auto drivers who spends more than eight hours on few selected busy traffic sites of the city. The study uses the primary data for the period 2011 to 2013 which includes busiest road intersection as well as auto depots from different parts of the city. The finding reveals that the year 2013 is the noisiest year and this also reported the highest numbers of auditory disorders on auto-drivers heath. Apart from this, during this year highest numbers of irritation and low tolerance level cases have also been registered on auto-drivers heath. Amongst all the survey sites, Ultadanga site from northern parts, Howrah Bridge Approach site from Central parts and Behala 14 no. bus stand site from southern parts have been considered as highest noisy sites in the city where highest numbers of health disordered have also been registered throughout the entire study period.

Keywords: Traffic noise pollution, human health, diseases.

INTRODUCTION:

The term pollution is the most significant environmental issues. Worldwide every civilized society suffers a lot from environmental pollution. Out of the several sources of noise pollution street traffic is one of the more prevalent and damaging source of noise. Vehicular traffic noise is one of those everyday pollutions that one comes across. These noises are not only annoying in nature but also have adverse impact on human health or well-being. Though this is ignored in everyday life but in reality this is killing many persons slowly. A growing body of research reveals, transport noise can cause several diseases like temporary and permanent hearing loss. Sleep disturbance, cardiovascular disease, elevated hormone levels, psychological problems may arise and even death is possible in some cases in the long run.

Traffic is the dominating source of noise and is the major source of nuisance and annoyance (Skanberg and Ohrstrom, 2002). Existing studies in regard to the traffic noise reveals several hazardous effect of noise pollution. Sharp and Donovan (1979) says that "more people are exposed to noise from motor vehicles than any other single source of noise". Bugliarello et al. (1976) says noise produced during acceleration can be as much as 20 dB greater than that produced at cruising speed. He further finds that noise from heavy trucks and buses are equivalent to that from 10 to 15 cars taken together. Study carried out in Merseyside in 2004 found 30 percent of people felt traffic noise had become worse over the previous five years (Merseyside Transport and Health Forum 2004). A study found a fifth of council tenants in the London Borough of Greenwich rated traffic noise as big a problem as crime, with those living on main roads the most concerned (Stewart 1998). Jamrah et al (2005) study on traffic noise in Amman shows the minimum and the maximum noise levels during night-time. The measured noise level exceeded the acceptable limit at most of the locations causing effect on the health. Den Boer and Schroten (2007) says, over 210 million people in Europe are exposed to traffic noise levels exceeding the threshold at which the World Health Organisation has found.The TERM 2008 report "Transports at a crossroads" by European Environment Agency (EEA) finds that 55 percent of those living in urban areas with more than 250,000 inhabitants in the European Union's 27 member states (67 million people) endure daily road noise levels above the lower EU benchmark for excess exposure. The recent case study of by Pal and Bhattacharya (2012) in Agartala finds that the most prevalent problems from the traffic noise include irritation, headache, tinnitus, and sleeplessness. Based on the statistical method by using a total of 270 respondents' data, he concludes that road traffic noise affects human efficiency at Government offices, private organizations, and commercial business centers beside the busy main roads.

The growing trend of mega cities lead to the heavy movements of vehicles, air network systems and multi- dimensional constructional works. Kolkata is not an exception of this. Overtime it is becoming increasingly crowded, busy and noisy even though certain measures have been taken to curb it. But the growing number of population along with the congested roads and large public transportation system, traffic noise is adding more to the problem.

The noise emitted from the engine, gear, clutch, and accelerator, break etc. (chakraborty, et. al., 2002) during operating time of auto-rickshaw plays a vital role in generating noise within and outside it. The metal body structure of the auto-rickshaw, music system, passengers, and horns also increases the noise level inside it. Moreover most of the times the autos pass through the over crowed, congested streets of the city which also increase the noise levels inside the vehicle. The noise produced by the auto-rickshaw does directly effects on the hearing capabilities of auto-drivers due to occupational compulsion. Exposure to loud and prolonged noise for several hours of life may be the cause of damage in hearing and other organs of human body. The ill effects of this is very slow and most of the times it may not left any alarming symptoms, and auto-drivers become aware of their disability when irresistible damage has been takes place in them.

In the light of this, it can be said that the traffic noise has several hazardous effect on the health of auto-drivers, as evident by the existing studies across the country. Some research findings and few reports prove that noise pollution affects auto-drivers health dangerously. But these reports and studies may be insignificant to make a concrete idea about the effects of noise pollution on them. This may be the reason that societies are not too much conscious about its ill effect on auto-drivers health. To make a concrete study in this regard the present paper is organised as follows. The second section underlines

the objective of the study. The third section describes the underlying methodology. The fourth section briefly describes the effect of noise pollution on human health. The fifth section describes the Traffic Noise and Non-Auditory Effects on Human Health. The sixth section describes the justification of the selection of the study area and the participants. The seventh section briefly describes the conditions of noise level in Kolkata. The eighth section analysis the findings of the study based on primary data and the last section concludes the findings.

OBJECTIVES:

Looking at the existing gaps in the available research findings in the relevant field, the present study has set the following objectives covering the period 2011 to 2013.

- To study the average noise level of the selected road junctions of Kolkata across the vital auto-routes in the city
- To study the impact of noise pollution on the health of auto-drivers and also other health problems in and around the noisy junctions in city roads.

MATERIALS AND METHODS:

The entire methodology of the study has been set into three interrelated processes i.e. measurements of sound levels, questionnaire survey and statistical analysis of the processed data. Sound levels were measured by using the sound level meter (model: 8928) with a digital LCD screen. This digital measuring device was calibrated every time before use. Several locations like vital road junctions and auto-rickshaw stand were selected to measure the accurate ambient noise level of these spots. Measurements were taken twice daily (viz. morning 9.00 to 12.00 pm and 6.00 to 9.00 p.m.). From the separate measurements of each time slot, the average noise was computed. The obtained average values were then used for further analysis.

A structure questionnaire has been prepared and distributed among the participants of the study to know the nature of noise borne diseases and its intensity level on auto transport driver's health on the noisy city streets.

PROCESS OF NOISE POLLUTION AFFECTING EAR:

Ear receives sound waves and sends it to the brain. Sound waves first enter to the outer ear and next, the waves strike the eardrum, tympanic membrane, causing it to vibrate. The vibrations are transmitted through the middle ear along a short chain of three small bones, the hammer, anvil and stirrup. Finally, in the inner ear these vibrations reach to the cochlea. It is a chamber ear filled with fluid and lined with tiny hair cells. The hair cells signal the auditory nerve to electrical impulses to the brain which interprets these impulses as sound. When one is exposed to long and prolonged noise, the hair cells are damaged and the transmission of sound is permanently altered. The cells can recover from mild damage, but severe damage will kill nerve cells producing permanent hearing loss. Especially loud noise will damage anyone's ear. One can categorize its effect on human being involving different facts of human life. (Khan and Khan, 2003)

THE EFFECTS TRAFFIC NOISE POLLUTION ON HUMAN HEALTH:

Noise pollution does cause many functional disorders in the organs of human body. But mainly it hampers the audio-logical structure of human body. Several effects of noise pollution on the human body are listed below.

Audio-Logical Effects:

If the noise is not too long and loud, then the hearing mechanism of a person gradually recovers threshold shift from noise pollution and the person experiences Temporary Threshold Shift (TTS). Many people who are exposed to industrial noise may in addition to a TTS, experience tinnitus (ringing

in the ears), vertigo, headache and fatigue for shorter or longer periods after the end of their working time. But when the exposure of noise is louder and of longer duration, then person's hearing mechanism does not recover and the person experiences Permanent Threshold Shift (TTS).

Biological Effects:

Biologically it does affect human being in various ways as listed below-

Effects on Heart:

A slowing of heart rate is also observed during high noise level. In fact, quicker heart beats, shrinkage of blood carrying and blood taking vessels, rising of blood pressure are the results of continuous exposure to high intensity sounds ultimately producing heart afflictions.

Effects on Blood Circulations:

In man, sound has shown to increase the secretion of adrenocorticotropic hormone ACTH from the anterior lobe of the hypothesis giving rise to increased secretion of cortisol from the adrenal cortex. Cortisol is known to influence the function of a number of systems. It is important for the action of adrenalin and neo-adrenalin on the blood circulatory system; it increases the glucose content of the blood, changes the reaction of the body to infections and decrease inflammatory reactions.

Effects on Brain:

Somewhat louder sound (80-90 dB (A) SPL) has been shown to affect the secretion of most of the hypo- physical hormones. This reaction is mediated via the hypothalamus, a part of the brain that receives input from many other parts of the brain through a very complicated system allowing ample possibilities of interaction between different external and internal stimuli.

Effects on Hormones:

Over all, loud sounds can cause an increased production of most hormones of the pituitary gland; among the most important of these is the adrenocorticotropic hormone (ACTH). Adrenocorticotropic hormone (ACTH) in turn stimulates the adrenal gland, which secretes several different hormones. These hormones also affect human body in several ways i.e. 1. Enhance the body's sensitivity to adrenalin, 2. Increase blood sugar level, 3. Suppress the immune system, and 4. Decrease the liver's ability to detoxify blood.

Effects on Other Biological Functions:

Sound in the range of 120-150 dB(A) can affect the respiratory system and affect balance to the extent of dizziness, disorientation, nausea and vomiting. It also affects the skin. Besides at 85-120 db noise levels, blood vessels constrict, pupil dilate, voluntary involving involuntary muscles become tense.

Psychological Effects:

Noise is one kind of mental torture to all intellectual people. Due to loud and prolonged noise it does hamper their concentration to think and study thus causing communication disruption, frustration, sleeplessness, lack of co-operation and social conflicts. Negative mental consequences include paranoia, suicidal and homicidal tendencies. This can cause nervous irritability, strain and tension in muscles. Intolerable agony may result when the source of noise is not known.

Personological Effects:

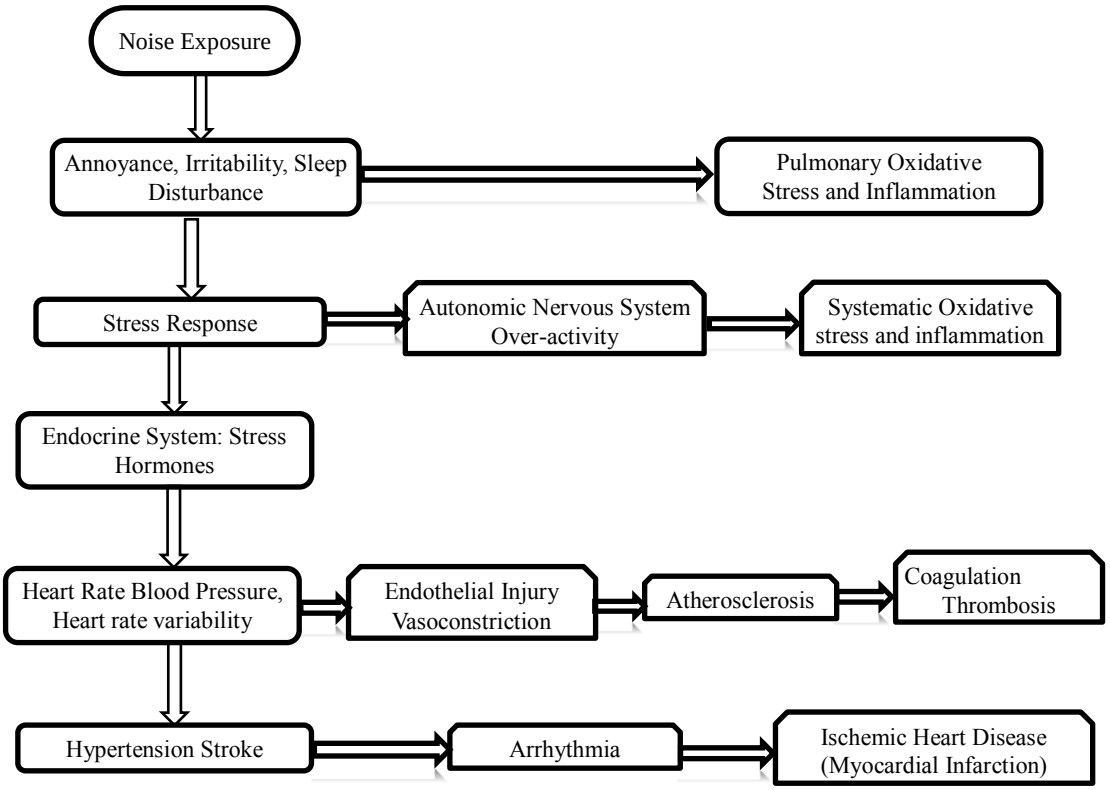
In children, it may develop a feeling of inadequacy, lack of confidence and poor perceptions of their

own self. This may paralyses personological development of growing child. Once these feelings are developed in growing child in their growing age, its dangerous effects are not to be removed easily without leaving any marks behind. (Park, 2005)

Behavioral Effects:

The undesired sound may be the cause of sudden annoyance. Sudden noise distracts a person and can create nervousness within him. Certain abnormalities like inability to think, analyze, solve problems etc. are found in human being due to high noise pollution. Accumulate tension and uneasiness to settle down, also occurs because of this. The unwanted sound can influence unborn babies producing malformation of the fetus nervous system that may effects on behavioral pattern later in life. (Agarwal, 2009)

Effects of Noise on Cardio-Vascular Diseases:



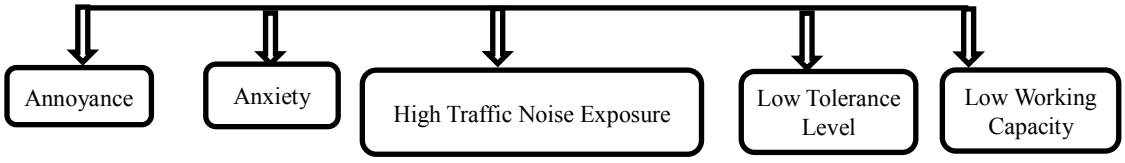
Source: WHO

TRAFFIC NOISE AND NON-AUDITORY EFFECTS ON HUMAN HEALTH:

Traffic noise does effects on human's health in many reverse ways. Some of these ill effects are given below-

High Traffic Noise Exposure and Performance Level *:*

Sudden traffic noise exposure during work performance in busy road sides may slow down the retention power of memory, influence the working power and also affects the tolerance level on human beings. Noise may reduce the helping behavior, increase aggression and reduce the processing of social cues seen as irrelevant to task performance.

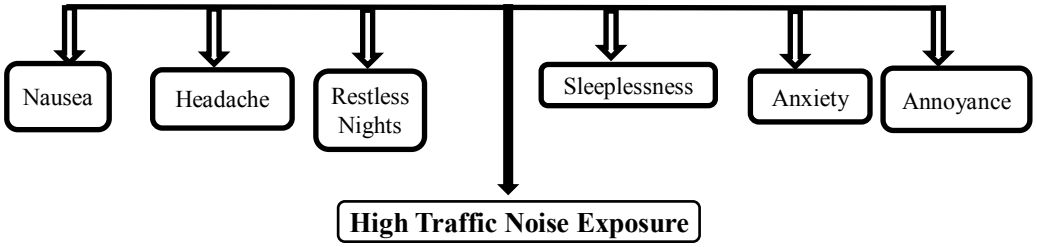


High Traffic Noise Exposure and Physical Disorders:

Exposure to high traffic noise also causes physiological disorder including increase in heart rate and blood pressure, peripheral vasoconstriction and thus increased peripheral vascular resistance. Many occupational studies have suggested that individuals chronically exposed to continuous noise at levels of at least 85-90 dB (A) have higher blood pressure than those not exposed to high noise. Sudden exposure of high traffic noise like air horns etc. are responsible for increasing blood pressure level which is cause of the annoyance and increased rate of heart beats.

High Traffic Noise and Psychological Disorders:

Regularly high noise exposure gives high level of nausea, headache, argumentativeness and changes in mood and anxiety.



JUSTIFICATION OF SELECTION THE SURVEY AREA:

The proposed research work has been conducted in the eastern bank of Hugli river, on the Kolkata Municipal Corporation located in eastern India at 22 30'N to 22 40'N latitude and 88 15'E to 88 20'E longitude and has an area of 187.33 km^2. More than one fourth of the total population of Kolkata lives in one room household, sharing it with five or more persons. Compared to other metros such as Delhi and Chennai, such population does not exceeds 10 percent of the total population. Acute space crisis often leads to noise pollution of higher magnitude. Ambient noise measurements have been taken by WBPCB and CPCB at 27 locations across residential, commercial, industrial and silence zones in the city of Kolkata from 1993 onwards. Road traffic noise pollution is also alarming and above the permissible standards in the city.

The first noise survey of the Kolkata city was conducted by the National Physical Laboratory in 1966 with the help of Calcutta Police and Citizen's Club. While monitoring the noise levels, in some residential colonies around Netaji Subhas Chandra Bose International Airport at Kolkata, the noise levels were found to be higher by CPCB than the notified ambient noise standards.

Noise pollution is more prevalent in urban society than in rural society. Kolkata being a megacity with multifarious transportation systems produce high level of noise in the city. This is the main reason for the selection of Kolkata city as the study area so that all factors of noise pollution and their human response mainly auto-drivers responses of the city may be studied in detail here.

The Survey Sites:

Traffic noise pollution is the major cause of noise pollution in the Kolkata city. To understand the condition of it, 27 auto-routes of the city have been selected. In northern part of Kolkata eight routes have been selected because these are busiest traffic sites there. In Central Kolkata ten busiest routes and in South Kolkata nine busiest routes have been selected as monitoring sites. These sites have already been selected as noise monitoring survey stations by West Bengal Pollution control Board. The selected survey sites are Shyambazar, Ultadanga, Maniktola, Hatibagan, Bagbazar, Rajabazar, Chitpur, Haora Bridge Approach, Dharmotola, B.B.D Bag, Bowbazar, Burrabazar, Sealdah, Moulali, Park Street, Park Circus, Topsia, Khiddirpore, Taratola, Behala 14 No. Bus Stand, Garia, Jadavpur 8B Bus Stand, Gariahat, Rashbehari, Hazra and Ballygunge Phari.

Location of the Survey Sites in the Kolkata Municipal Corporation Area, 2011-2013

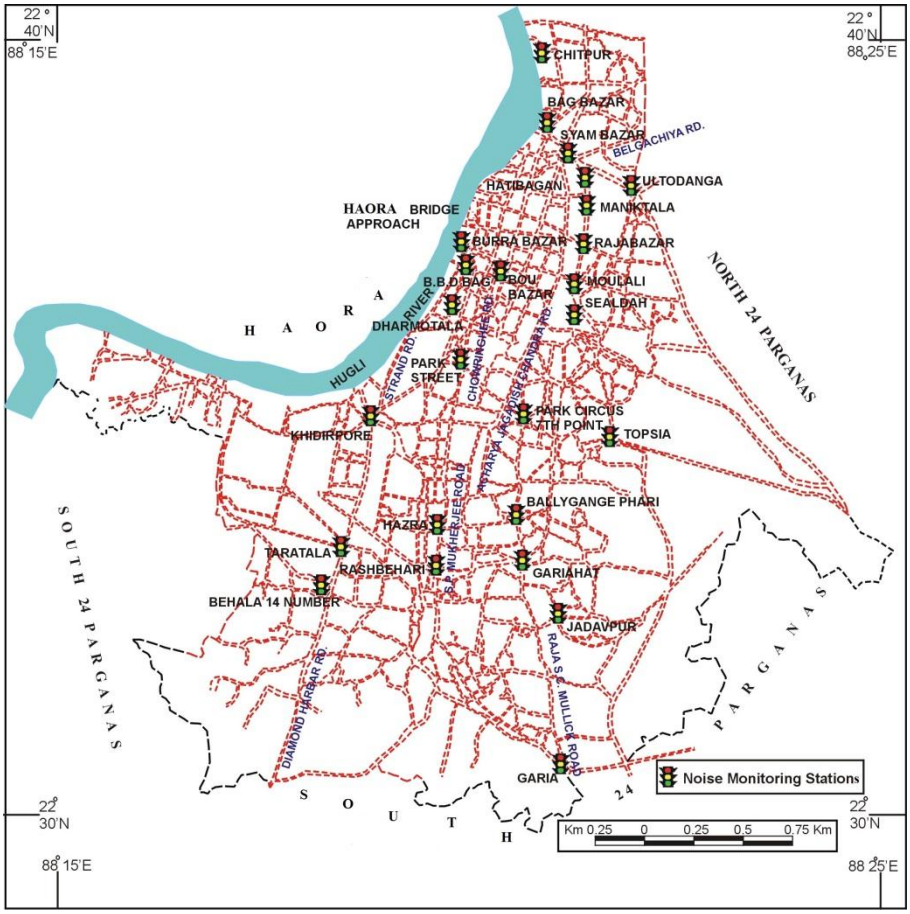


Fig.1.

Source: *Primary Data*

Participants of the Study:

Occupationally exposed auto drivers are chosen for the participants of the survey. Auto-drivers have been selected here for several reasons i.e. due to occupational compulsion they have to stay in prolonged noisy roadside more than eight to ten hours in a day. They often crosses busy and crowed city streets does effects very badly on their hearing mechanism. According to WHO reports public transport drivers who practicing their job more than twenty years they definitely falls in many audio-logical problems thus auto-drivers have been selected here as for the participants of the study. Participants are mostly male non-smokers, healthy particular from 25 to 41 years old age group people who have not suffered any kind of audiometry health problems previously.

The respondents, those are occupationally exposed by noise pollution were randomly selected from these survey sites. A total of 540 auto-drivers are randomly picked in three consecutive survey years i.e. 2011, 2012 and 2013. Mainly participants were included from a non-smoking healthy background in the age group of 25 to 41 years who have not been suffered from any medical cases previously. The entire survey periods have been classified into two session's viz. the winter and the summer. The month of January and June are taken as the winter and summer season survey period respectively. Peak and non-peak hours in a day have been selected for survey timings.

NOISE POLLUTION LEVELS IN THE KOLKATA CITY:

Most of the countries in the world release the official bench mark level of noise pollution. In Indian

context, it is the CPCB provides the noise level statistics as per the Indian standard. The classification as reported by the CPCB is given in table 1.

Table 1: Ambient Emission of Noise Standards in India

Sl. No.	Area	Day time noise level in dB(A)	Night time noise level in dB(A)
I	Industrial Area	75	65
II	Commercial Area	65	55
III	Residential Area	55	45
IV	Silence Zone	50	40

Source: Ararwal, 2009

Like Central Pollution Control Board, every state has its own pollution measuring organization. The organizations act as decision making supreme committee at the state level. In West Bengal, West Bengal Pollution Control Board (WBPCB) provides the annual noise pollution data reports every year. Based on the primary survey, the following figures (figure 2, 3 and 4) gives the ambient average noise levels in the city during the survey period 2011 to 2013.

Average Traffic Noise Level in Busy Road Crossings in Kolkata, 2011-2013

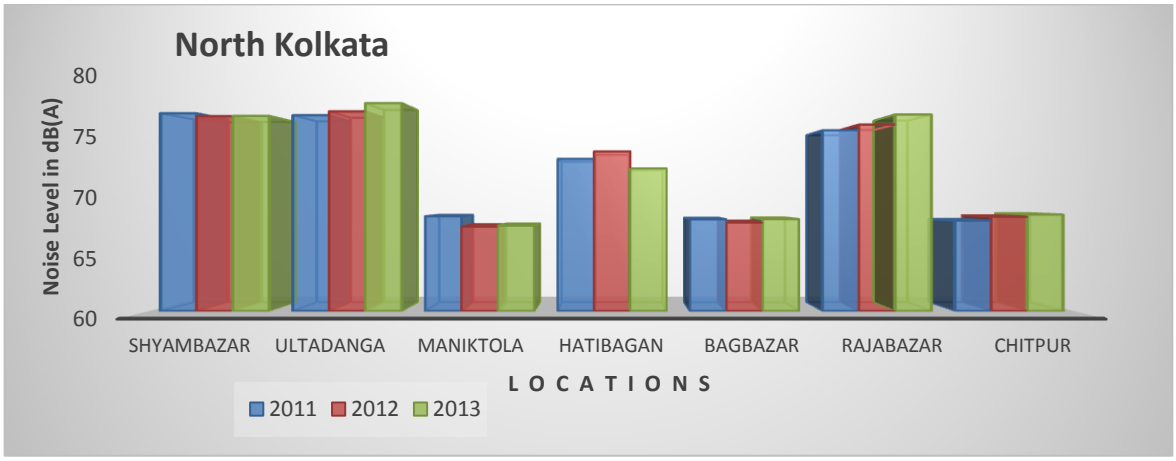


Fig.2 **Source:** *Primary Data*

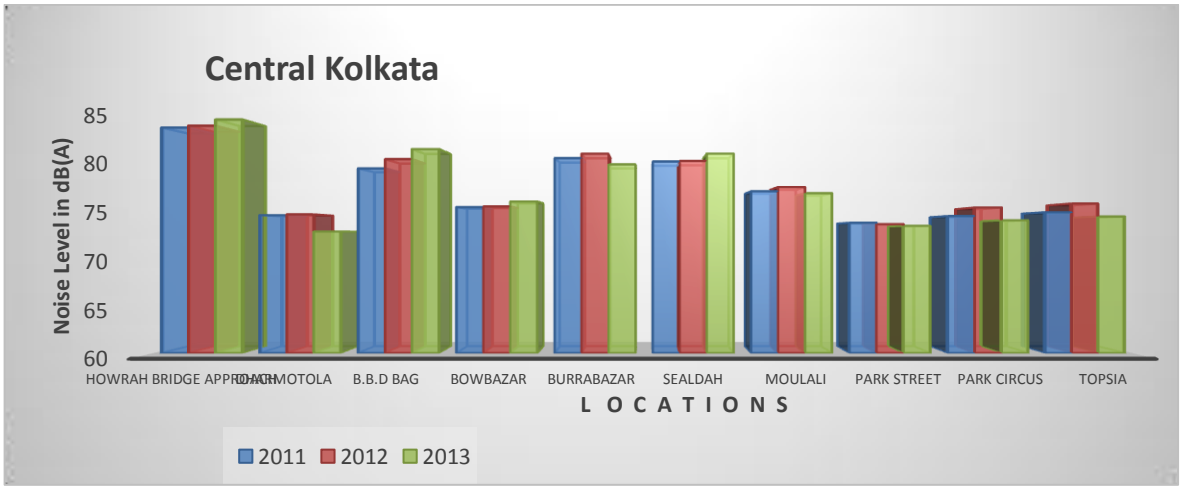


Fig.3 **Source:** *Primary Data*

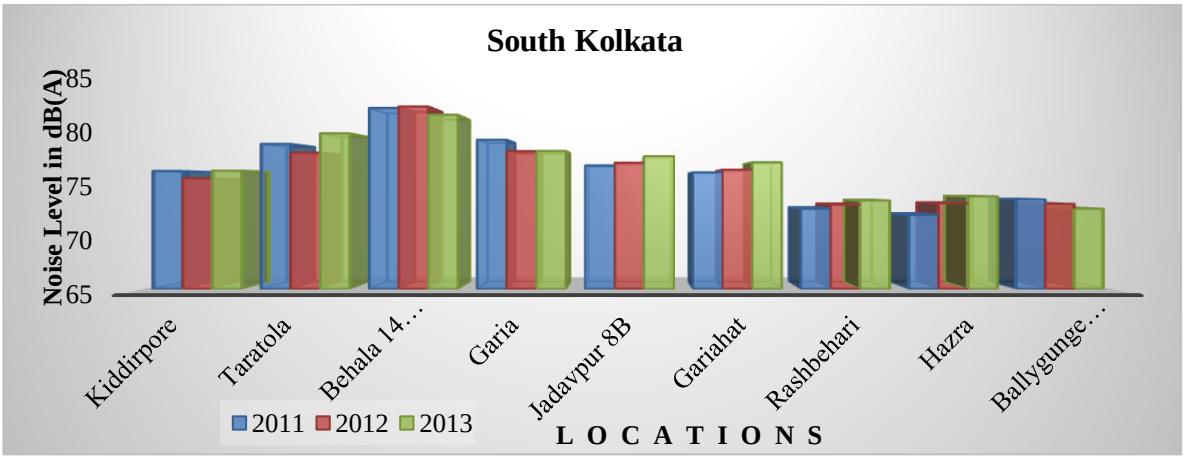


Fig.4 **Source:** *Primary Data*

RESULTS AND DISCUSSION:

If we thoroughly follow the nature of noise pollution during 2011 to 2013, it is observed from the data that there is no significant change in the average ambient noise level in the mentioned years. However, the average noise level during these periods is noticed higher over the prescribed National Noise Level Standard. This can be mentioned as a danger sign for the public health of the concerned areas, particularly for auto drivers who are exposed to such a high noise level due to their occupational compulsion.

The present study in the selected sites reveals the existence of eleven types of noise induced health hazards among the respondents. These health hazards are namely temporary hearing loss, permanent hearing loss, headache, irritation, fatigue, anxiety, insomnia, low blood pressure, nausea, low tolerance level and low working capacity. The share of the noise induced health hazards in three consecutive survey years 2011, 2012 and 2013 is given in figure 5, 6 and 7. It is evident from the figures that more than half of the auto drivers have been suffered from irritational to low tolerance level problems. On the other hand, the survey shows a very few auto drivers have been affected from anxiety and nausea problems. However, auto drivers exposed to the hearing disabilities have increased in the year 2013 over the preceding years.

Annual Variations of Noise Related Health Hazards of the Auto-Driver's 2011-2013

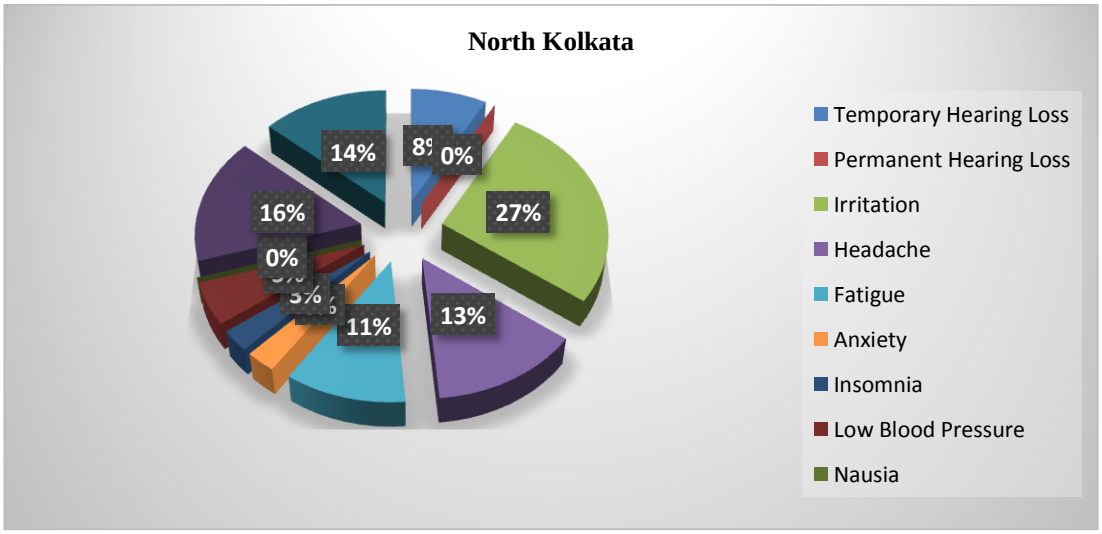


Fig.5 **Source:** *Primary Data*

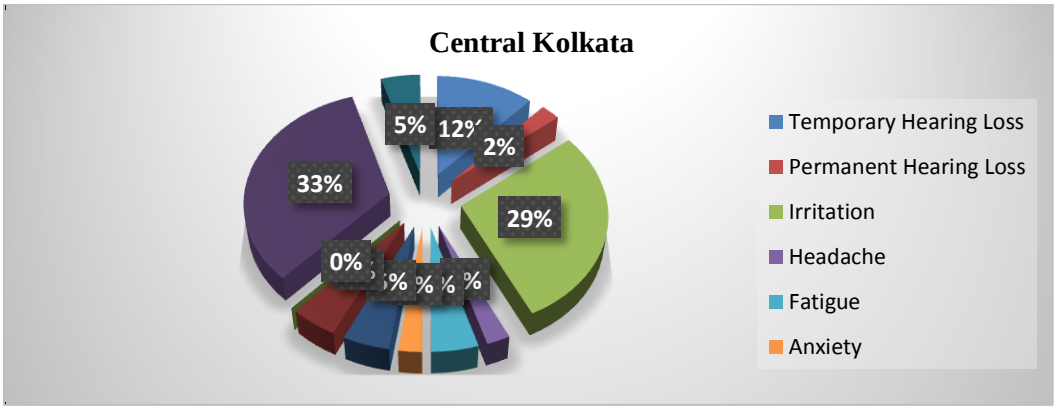


Fig.6 **Source:** *Primary Data*

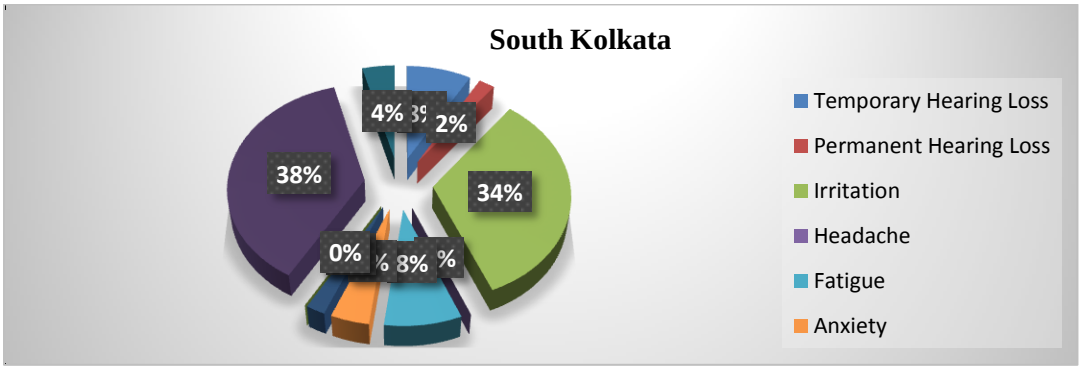


Fig.7 **Source:** *Primary Data*

As per the survey, among the respondents it has been found that aged auto drivers are the most affected persons from hearing disorders. On the other side, their younger counterparts are the least affected persons by the same disorders. An insight into the findings of the noise related health hazards reveals, mostly the aged auto drivers are affected from temporary hearing disabilities. Even permanent hearing disability cases also been noticed among them though these are very few in number. Mostly auto drivers included into middle aged group are affected more by irritational as well as low tolerance level problems due to long time exposure into noisy atmospheres.

Locality wise, hearing disability cases found highest in numbers in central Kolkata as these are most noisy sites amongst other sites. Very little number of auto drivers from north Kolkata sites been suffered from hearing disabilities. Particularly, Howrah Bridge Approach from central part and Behala 14 no.bus stand survey sites from southern parts of the city had more numbers of auditory cases during the entire survey period which is also followed by Ultadanga site from northern part as already mentioned these are more noisy sites throughout the entire period of study. Overall, total numbers of noise induced health disorders cases have been found highest mainly central parts of the city than other two parts due to several relevant reasons like Howrah sites are known to be the gateway of the city from other districts as well as states as Howrah Station is the vital landmark of the entry point of the city. Secondly, B.B.D Bag site is known as CBD area or famous office para of Kolkata from British *raj*. Thirdly, Sealdah site becomes very noisy as it is another gateway of the city from other sub urban places through Sealdah Station. Bowbazar and also Burrabazar markets are also known as famous whole shale markets of the city. Above all these reasons altogether responsible for making favourable over crowed and noisy nature of the central parts of the city.

All total, among all the noise induced health hazards irritation and low working capacity are more common among all the auto drivers from several age groups though middle aged drivers are more rowdy than younger as well as older participants.

A comparison among different survey sites show that, Ultadanga crossing, Howrah Bridge Approach and Behala 14 no.bus stand sites from northern, central and southern parts of the city are most noisy sites. There are several reasons in favour of this fact but mainly heavy traffic jam is the major one as these are known as vital traffic junctions and auto hub of the city. Many constructional activities like sewerage systems, flyovers and metro railway projects also increase the noisy nature of these areas.

CONCLUSION:

The present study in the light of the growing pollution in the Kolkata city reveals some interesting facts. Though few existing reports and studies have given an insight to the level of noise pollution, but the present study, based on the cross sectional data reveals that the noise pollution level during peak hours of the day time is the highest during the winter season than the summer. As seen, the total traffic volume is always higher in southern parts of the city than northern parts, mainly Behala 14 no.bus stand and Taratola junctions, considered as the highest traffic congested places in the city.

Exposure to high noise pollution level does effect on human health which is the key finding of the paper during 2011 to 2013. From our findings eleven major health disorders have been noticed on auto-drivers health due to high noise level in the city particularly during the entire survey period. The year 2013 shows a higher noise pollution related health disorders that includes primarily the higher hearing disorders, irritation and low tolerance level problems on respondents. However, a substantial decline in other forms of disorder is noticed during 2013 over the same periods of last two years.

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Table 2: Ambient Average Noise Level in North Kolkata

LOCATION	2011	2012	2013
Shyambazar	77.23	76.97	77
Ultadanga	77.06	77.39	78.12
Maniktola	68.25	67.35	67.43
Hatibagan	73.25	73.9	72.42
Bagbazar	67.98	67.7	68
Rajabazar	75.75	76.24	77.12
Chitpur	67.86	68.2	68.4

Source: *Primary Data*

Table 3: Ambient Average Noise Level in Central Kolkata

LOCATION	2011	2012	2013
Howrah Bridge Approach	84.13	84.33	85.23
Dharmotola	74.75	74.83	73
B.B.D Bag	79.76	80.75	81.83
Bowbazar	75.61	75.68	76.21
Burrabazar	80.86	81.34	80.2
Sealdah	80.5	80.56	81.34
Moulali	77.31	77.76	77.1
Park Street	73.93	73.8	73.6
Park Circus	74.65	75.56	74.2
Topsia	75.06	75.99	74.6

Source: *Primary Data*

Table 4: Ambient Average Noise Level in South Kolkata

LOCATION	2011	2012	2013
Kiddirpore	76.46	75.76	76.5
Taratola	79.08	78.25	80.1
Behala 14 no.bus stand	82.56	82.71	81.9
Garia	79.49	78.38	78.4
Jadavpur 8B	77	77.26	77.9
Gariahat	76.33	76.58	77.3
Rashbehari	72.8	73.2	73.6
Hazra	72.18	73.33	74
Ballygunge Phari	73.7	73.26	72.8

Source: *Primary Data*

Table 5: Health Hazards Induced by Traffic Noise Pollution in North Kolkata

Location	Temporary Hearing Loss	Permanent Hearing Loss	Irritation	Headache	Fatigue	Anxiety	Insomnia	Low Blood Pressure	Nausea	Low Tolerance Level	Low Working Capacity
Shyam-bazar	3	0	10	5	4	1	1	2	0	6	5
Ulta-danga	4	0	8	4	6	0	2	4	1	8	3
Manik-tola	0	0	5	3	3	0	0	1	0	4	3
Hati-bagan	0	0	6	2	4	1	1	2	1	7	4
Bag-bazar	0	0	9	2	2	0	0	0	0	5	4
Raja-bazar	0	0	11	3	2	1	4	2	1	6	5
Chit-pur	0	0	6	1	1	0	0	1	0	4	6

Source: *Primary Data*

Table 6: Health Hazards Induced by Traffic Noise Pollution in Central Kolkata

Location	Temporary Hearing Loss	Permanent Hearing Loss	Irritation	Headache	Fatigue	Anxiety	Insomnia	Low Blood Pressure	Nausea	Low Tolerance Level	Low Working Capacity
Howrah Bridge Approach	5	1	12	1	2	1	2	2	0	14	2
Dharmo tola	2	0	4	0	1	0	1	1	0	15	0
B.B.D Bag	4	1	11	1	3	0	5	3	0	10	0
Bowbazar	2	0	7	0	1	0	4	4	0	8	1
Burra bazar	3	0	8	2	2	1	1	2	2	11	1
Sealdah	2	0	10	2	4	0	0	1	1	12	0
Moulali	1	0	4	1	2	0	1	3	0	8	1
Park Street	0	0	2	1	1	0	2	1	0	5	2
Park Circus	3	0	6	0	2	0	3	2	0	7	3
Topsia	2	0	4	0	3	1	0	1	0	4	1

Source: *Primary Data*

Table 7: Health Hazards Induced by Traffic Noise Pollution in South Kolkata

Location	Temporary Hearing Loss	Permanent Hearing Loss	Irritation	Headache	Fatigue	Anxiety	Insomnia	Low Blood Pressure	Nausea	Low Tolerance Level	Low Working Capacity
Kiddirpore	4	1	16	0	4	2	1	0	0	18	2
Tara-tola	3	0	12	2	6	0	0	2	0	10	0
Beha-la 14 no.bus stand	5	0	13	1	5	1	2	3	0	12	0
Garia	4	1	6	0	2	0	0	1	1	8	2
Jadavpur 8B	2	0	17	1	3	1	3	1	0	11	1
Garia-hat	0	1	20	2	1	0	1	0	1	7	0
Rash-behari	0	0	12	0	2	0	0	1	0	5	1
Hazra	0	0	8	1	1	1	0	1	0	6	0
Bally-gunge Phari	1	0	7	0	2	0	0	0	0	8	1

Source: *Primary Data*
