

Awareness and Perception of the Health Impacts of Noise Pollution among Ikot Abasi Urban Dwellers

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Abstract

The study investigated the awareness and perception of health impacts of noise pollution among the Ikot Abasi Urban dwellers. The objectives were to examine how the people of Ikot Abasi Urban dwellers were aware of noise pollution, how they perceived the health impacts of noise pollution, the level of health impacts and the level of sources of noise pollution in the study area. four research questions and two null hypotheses were raised to guide the study. Relevant related literature was extensively reviewed. Ex-post facto survey design was employed for the study in which three hundred (300) respondents served as the sample from a population of 132,608. A validated instrument titled “Awareness and perception of health impacts of noise pollution among the Ikot Abasi Urban Dwellers” was used to gather the data. The data obtained were treated with descriptive statistics (percentages) and Chi-square statistics, at 0.05 level of significance. Ikot Abasi urban dwellers showed high level of awareness of noise pollution and high level of perception of the effects of noise pollution on health. The sources of noise pollution among the people were high from churches, to schools, motor parks, industrial construction companies, markets and highest from the motor vehicles and airplanes. Based on the findings it was recommended among others that the enactment of laws to regulate levels and places where noise pollution should not exist; educational programmes for the people; also erecting of heavy industries, markets, schools, motor parks and airports away from residential areas.

Keywords: awareness, health, noise, pollution urban dwellers

Introduction

A sound consists of audio-waves. Sound has two aspects; the music aspect that is pleasing to the ear, and the other displeasing aspect is the noise (Sloan, 1992). A musical sound is characterized by regular tempo, appreciable amount of volume and amplitude to the ears. Music is totally enjoyable to the receiver. To a certain extent a loud music could become too unpleasant to the ear. Noise therefore, is a variety of unwanted sound (Dictionary, 2012). Loud ones that disturb people or make it difficult to hear the wanted sounds are noise. Even conversations of other people may be called noise by people not involved in any of them; any unwanted sound such as the barking

of domesticated dogs, neighbours' loud music, portable mechanical saws, road traffic sounds, or a distant aircraft in a quiet countryside is called noise (Jack, 1988).

Acoustic noise can be anything from quiet but annoying and harmful. At one extreme, users of public transport sometimes complain about the faint and tinny sounds emanating from the headphones or ear-buds of somebody listening to a portable audio player; at the another, it is the sound of very loud music, a jet engine at close quarters, can cause irreversible hearing damage. At intermediate levels, there are a range of deleterious health effects from noise. This "intolerable corruption of human space" can be called noise pollution.

Russolo (2004) in his article, "The joys of Noise" claimed that noise has become so prominent that pure sound no longer exists. Some modern music seems to be highly appreciated noise that acceptable music to youths. Barthes, (1985) observed that noise can be perceived either physiologically or psychologically. People perceive noise physiologically when we "hear" it. On the other hand, when we "listen" to a se we are doing this psychologically along. When people perceive a physiological noise we subconsciously feel the vibrations of the noise (sound) waves with our particles in our physical body whereas psychological noise refers to noise that is perceived when our conscious awareness shifts its attention to that noise rather than letting it filter through our subconscious where it goes unnoticed (Sloan, 1992; Posner, 2005).

The environment Protection Agency (EPA) recommends that humans maintain noise levels below forty-five decibels (dB) during daylight hours and thirty-five dB during the night. Decibel is a term in which amount of sound is measured (McMillan Dictionary, 2015). The World Health Organization has published a number of researches on noise levels (WHO, 2011). The WHO reported that while normal conversations would occur at fifty-six to sixty dB, conversations could generally occur at higher levels due to the louder baseline noise from equipment and activities in the neighborhood. WHO recommended that noise levels in patient's rooms be maintained at levels at or below 35 dB. Campbell (1983) describes this background noise as "chronic, negatively valued, non-urgent, physically perceptible, and intractable to the efforts of individuals to change them". Continued exposure to excessive noise has a physiological and psychological impact on a person (Gupta, 1992). This research will however, look into the awareness and perception of the dangers of noisy environment to health.

Activation Theory propounded by (Skinner, 2003) explains the signal or information detection. Procedure in the human body. It was observed that in an individual there is always a state of nervous activity. That the nervous activity varies on the continuum (range of existence) from the very low to the very high nervous activity state. Very low indicates when one is in extreme excitation or excitement; that there is an optimal Level of Activation (OLA), which allows maximum performance. The theory is that noise is an extraneous interference. The human being

or specifically the Central Nervous System (CNS) CNS is an information channel by itself and the state of the channel would detect how the information is being processed. When there is low activation level in the CNS the amount of information processed is low if the channel is extraneous interference among which is noise. Noise therefore is a factor in the perfect performance of the nervous system.

The signal Detection Theory propounded by Swets and Tanner (2004), states that whenever decision is taken; it is taken under two conditions; under uncertainty and against the background of noise or interference in the mechanism. For an example in sports skill, the uncertainty is that the sun's ray may affect the eyes of a ball catcher while trying to catch a ball. In the background of noise, the player may not hear the call from his teammates or the referee's call for fault. Therefore, noise affects human performance equally as uncertainty does. Application to solving noise problem is the Discrimination and Selective Attention Principle for noise interference. This principle enables sports players and individuals takes on selective attention by focusing on the specific, to go without the noise interfering with their sensory detection mechanism. Like A good athlete, one should be able to withstand "distractions". Such a practice of noise distraction was commonly used by former World Boxing Champion, Mohammed Ali (1980) to get his opponent seriously angry with insults, by calling them "gorilla and ugly beast" and thereby distracting their attention to perform without good concentration. The theory is that one should learn to select what to hear and discard what not to hear so as to resist noise pollution.

Statement of Problems

Noise pollution has constituted a menace over the years in the society. Today its impact on health is very effective, but seems to be given far less attention than required. Noise pollution in Ikot Abasi has its sources from the blaring of music by vendors, street party organizer, religious organization, outdoor religious advertisers, and traditional masquerade festivals called Udo, Sound from production factories in the likes of Ibom Power Plant, ALSCON Company, etc. help to compound the noise pollution problem. The indiscriminate use of horns by motorists and cyclists on major roads in the town cannot be left out. All these make up the increasing threats to humanity on noise pollution.

The high level of noise has become a major source of health hazard (Hajah, 2004). More citizens are suffering from hearing impairment as a result of noise pollution noise pollution has increased the risk of hypertension and other incurable diseases and must be stemmed (Paul, 1990). Hence, this research tends to fill that gap in a bid to ameliorate the situation.

Purpose of the Study

The purpose of this study was to investigate the awareness and perception of the health impact of noise pollution among Ikot Abasi Urban dwellers. To achieve this purpose the following objectives were generated to guide the study.

1. To determine the level of awareness of noise pollution among Ikot Abasi Urban dwellers.
2. To determine the level of perception of health impacts of noise pollution among Ikot Abasi Urban dwellers
3. To determine the level of health impacts of noise pollution among Ikot Abasi Urban dwellers
4. To determine the level of sources of noise pollution among Ikot Abasi Urban dwellers

Research Questions

1. What is the level of awareness of health impacts of noise pollution among Ikot Abasi Urban dwellers?
2. What is the level of perception of health impacts of noise pollution among Ikot Abasi Urban dwellers?
3. What is the level of health impacts of noise pollution among Ikot Abasi Urban dwellers?
4. What is the level of sources of noise pollution among Ikot Abasi Urban dwellers?

Null Hypotheses

1. There is no significant difference in the level of awareness of health impacts of noise pollution among Ikot Abasi Urban dwellers.
2. There is no significant difference in the level of perception of health impacts of noise pollution among Ikot Abasi Urban dwellers.

Methodology

Ex-post facto survey design was used for this study as the research materials are already there at the study area. The design enabled the researcher to collect detailed and factual information. The area of the study is centered on awareness and perception of noise pollution among Ikot Abasi Urban dweller. The area is bounded in the south by the Atlantic Ocean; at the East by Rivers State; by the West by Mkpato Enin LGA and Ukanafun LGA in the North. The area has been chosen as a case study because of the industrialization of the town so as to highlight dangers of noise pollution and ways to seek solution.

The population stood at 132,608 (according to National Population Census 2006), consisting of five (5) clans, namely Ukpum Okon, Ukpum Ette Asanga, Edem Aya Akama, Ikpa Ibekwe were purposively chosen for the study, because they are the towns with an urban setting, which best suited the focus of the study. three hundred (300) citizens were randomly selected comprising 75 students, 75 civil servants, 75 business owners and 75 road transport workers. A self-constructed questionnaire was produced to the respondents to acquire their firsthand experience with noise pollution and the impact it has posed on their health. The instrument for the study was scrutinized for face validity by three experts in the Department of Physical and Health Education, University of Uyo, Uyo. The corrections were affected before final production of the instrument for the study.

In order to ascertain consistency, a test re-test method was conducted through the administration of the instrument to randomly selected 50 respondents who were not part of the sample used for the study. The data collected were subjected to Pearson's Moment Correlative Statistics in which yielded a reliability coefficient of .72. Quantitative data collected were sorted manually and analysed using the Descriptive and Chi-square statistics; with the probability level of significance set at .05.

Research Question1 : What is the level of awareness of health impacts of noise pollution among Ikot Abasi Urban dwellers?

Table 1: Summary of Descriptive Statistical Analysis (Percentage) on Level of Awareness on Health Impacts of Noise Pollution among Ikot Abasi Urban dwellers.

S/N	Level of Awareness	YES (%)	NO (%)
1	Noise is a form of sound dangerous to health	170 (56.7)	130 (43.3)
2	Noise is an irritable sound to the ears	220 (73.3)	80 (26.7)
3	A very loud music is an un-enjoyable noise	210 (70)	90 (30)
4	Noise is opposite to music and unpleasant to ears	280 (93.3)	20 (6.7)
5	Nosie is opposite to music and unpleasant to ears	300 (100)	0.(0)

Findings in Table1, the responses to the Level of Awareness on Health Impact of Noise Pollution were that 170 (56.7%) accepted that Noise is a form of sound dangerous to health; while 130 (43.3%) rejected it. For the statement, that noise is an irritable sound to the ears; 220 (73.3%) agreed against 80 (26.7%). In the statement that a very loud music is an un-enjoyable noise, 210 (70%) agreed against 90 (30%). Thereafter 280 (93.3%) agreed that noise can cause ill-health, lastly 300 (100%) agreed that noise is opposite to music and unpleasant to ears.

Research Question2: What is the level of perception of health impacts of noise pollution among Ikot Abasi Urban dwellers?

Table 2: Summary of Descriptive Statistical Analysis (Percentage) on Level of perception of Health Impacts of Noise Pollution among Ikot Abasi Urban dwellers

S/N	Extent of Level of Perception	YES (%)	NO (%)
1	Noise can be dangerous to physical health	170 (56.7)	130 (43.3)
2	Noise can cause sleeplessness	250 (83.3)	50 (17.7)
3	Noise is an irritable sound	200 (66.7)	100 (33.3)
4	Noise can pollute the environment	230 (76.7)	70 (23.3)
5	Nosie can affect mental health	190 (63.3)	110.(37.7)

Findings in Table 2, the response of Level of Perception on Health impacts of noise pollution were that 170 (56.6%) agreed against 50 (17.7%). In the statement that noise is an irritable sound, 200 (66.7%) agree against 100 (33.3%). Lastly, 190 (63.3%) agreed that noise can affect mental health; against 100 (37.7%).

Research Question 3: What is the level of health impacts of noise pollution among Ikot Abasi Urban dwellers?

Table 3: Summary of Descriptive Statistical Analysis (Percentage) on Level of Health Impact of Noise Pollution among Ikot Abasi Urban dwellers

S/N	Level of Awareness	YES (%)	NO (%)
1	Noise raises the heart beat	280 (93.3)	20 (6.7)
2	Noise impairs hearing ability	260 (86.7)	40 (14.3)
3	Noise affects emotional stability	220 (73.3)	80 (26.7)
4	Noise affects reasoning ability	240 (80)	60 (20)
5	Nosie can affect physical tasks	210 (70)	90(30)

Findings in Table 3: the responses on the level of health impacts of noise pollution were that 280 (93.3%) accepted that noise can raises the heat beat; while 20 (6.7%) rejected it. For the statement, that noise impairs hearing ability, 260 (86.7%) accepted that Noise raises the heart beat; while 20 (6.7%) rejected it. For the statement, that noise impairs hearing ability, 260 (86.7%) agreed against 40 (14.3%). In the statement that noise affects emotional stability, 220 (73.3%) agree against 80 (26.7%). Then for the statement that noise affects reasoning ability, 240 (80%) as against 60 (20%). Lastly, 210 (70%) agree that noise can affect physical tasks as against 90 (30%).

Research Question 4: What is the level of sources of noise pollution among Ikot Abasi Urban dwellers

Table 4: Summary of Descriptive Statistical Analysis (Percentage) on Level of sources of Noise Pollution among Ikot Abasi Urban dwellers

S/N	Level of sources of Noise Pollution	YES (%)	NO (%)
1	Motor vehicles and airplane cause much noise pollution	135 (45)	165 (55)
2	Markets and street hawkers cause much noise pollution	51 (17)	249 (83)
3	Schools and playgrounds cause much noise pollution	24 (8)	276 (92)
4	Industrial construction sites cause much noise pollution	45 (15)	255 (85)
5	Churches religious assemblies cause	15 (5)	285 (95)
6	Motor parks cause much noise pollution	30 (10)	270 (90)

Findings in Table 4: the responses on the level of source of noise pollution on health impacts were that 135 (45%) accepted that motor vehicles and airplane cause much noise pollution while 165 (55%) rejected it. For the statement that markets and street hawkers cause much noise pollution; 51 (17%) agreed while 249 (83%) rejected it. For the statement, that schools and playgrounds cause much noise pollution, 24 (8%) agreed against 276 (92%). In the statement that industrial construction sites cause much noise pollution, 45 (15%) agree against 255 (80%). Then for the statement that churches religious assemblies cause much noise pollution, 15 (5%) as against 285 (95%). Lastly, 30 (10%) agreed that motor parks cause much noise pollution as against 270 (90%).

Null Hypothesis

Null Hypothesis 1: There is no significant difference in the level of awareness of health impacts of noise pollution among Ikot Abasi Urban dwellers.

.Table 5 summary and Chi-Square statistics on Hypothesis 1

S/N	Level of Awareness	Fo-fe	$\Sigma (fo-fe)^2 fe$	X^2
1	Noise is a form of sound dangerous to health	130	56.3	105.9
2	Noise is an irritable sound to the ears	80	21.3	
3	A very loud music is an un-enjoyable noise	90	27	
4	Noise is opposite to music and unpleasant to ears	20	1.3	
5	Nosie is opposite to music and unpleasant to ears	0	0	

*Significant at $p \leq .05$, $df 4 = X^2$ critical 9.49

Findings in Table 6 showed that the X^2 calculated of 105.9 was greater than the X^2 critical value of 9.49. The Hypothesis was therefore rejected. There was significant difference in the level of Awareness of Health Impacts of Noise Pollution among Ikot Abasi Urban dwellers.

Null Hypothesis 2: There is no significant difference in the level of awareness of health impacts of noise pollution among Ikot Abasi Urban dwellers.

Table 6: summary and Chi-Square statistics on difference in the level of awareness of health impacts of noise pollution among Ikot Abasi Urban dwellers

S/N	Level of Awareness	Fo-fe	$\Sigma (fo-fe)^2 / fe$	X^2
1	Noise is a form of sound dangerous to physical health	130	56.3	154.3
2	Noise can cause sleeplessness	50	8.3	
3	Noise is an irritable sound	100	33.3	
4	Noise can pollute the environment	70	16.3	
5	Nosie can affect mental health	110	40.3	

*Significant at $p \leq .05$, $df 4 = X^2$ critical 9.49

Findings in Table 8 showed that X^2 calculate of 154.3 was greater than the X^2 critical value of 9.49. The hypothesis was therefore was therefore rejected. There was significant difference in the level of Health Impacts of Noise pollution among Ikot Abasi.

Discussion of Finding

Awareness of Health Impact of Noise Pollution

The study noted a high level (significant) awareness of Health Impacts on Noise Pollution among the population of Ikot Abasi Urban dwellers. This was similar to (Ubuoh, *et al* 2012) while studying perception of health impact of environment noise in an ambient noise context in Owerri Urban, Imo State. The people more fully aware of what constituted noise and the adverse health impact that would arise from it in the environment. Being aware or having knowledge of an entity than can cause ill-health is a right step in right direction. Knowledge and awareness of a problem is considered very important in the commencement of minimizing or tackling a problem. This is also applicable health problems like noise pollution (WHO, 1999). They noted that noise can be dangerous to physical health can cause sleeplessness (insomnia) can pollute the environment and can affect mental health.

Perception of Health Impact of Noise Pollution:

They study noted the people of the Ikot Abasi urban dwellers had high level of perception of noise pollution. They perceived that: noise has adverse health impact on the people. There were

that noise is irritable to the ear, noise makers are themselves irritable people, that noise making can bring about friction among the people, that noise is a social problem among the people, and noise makes the environment uncomfortable to stay. This perception was high among the people such trend was noted by (Evans, *et al*, 1998). Safety regulations have shown that Government has often placed safety notices for the judiciary court premises and for psychiatric hospitals. This shows the high perception of Government on the disturbances that noise would cause to the judges and the audience in court sessions. Similarly, the high perception is also reflected in making sure that the inmates at the psychiatric hospitals are not irritated by noise. This is in confirmation of the fact that noise not only affect the learning process, it also affects the reasoning process. These findings were also supported by Bradley, (1978) and Cohen, (1980).

Health Impact of Noise Pollution

The study noted the noise affected the cardiovascular by stem. This is supported by (Cohen, 1980) who noted that at noisy environment the pulse rate and blood pressure of workers rose higher than when the environment was not noisy. The study also noted that noise affected listening ability (auditory process). This was also supported by (Evans & Lepore, 1993), who had earlier noted the same results among factory workers and soldiers at heavy fighting war fronts (Simpson, 2001), at children living around busy airports (Haines, *et al*, 1998), babies in the womb and postnatal infants (Evans & Vos, 2008). In support of the findings of the noise adverse effect on people's emotion (Pearsons, 1998) also noted same that people's emotions are unstable in a noisy environment where quietude and concentration are needed school children studying under a noisy environment showed unstable emotion (Zaidi, 1998).

Cohen (1980) also noted that noise affected mental health of an individual, similar to that of the study. both the study and that of (Job, 1990) noted that noise can influenced negative social relationship among people who make noise and those who hate noise.

Source of Noise Pollution

The study also descriptively noted that the noise pollution form land vehicles (car/lorries, etc) air planes constituted at 45 % level; market had 19%, construction company with heavy duty facilities and equipment had 17% crowded pedestrians like busy motor parks had 10% while schools 5% and church (3%) came last in that descending order. This was also noted in a similar tread in levels by (Ubuoh *et al*. 2012) who studied noise pollution in Owerri Urban.

Conclusion

It was concluded that the people had a high level of awareness and perception health impacts of noise pollution. Health impacts from noise pollution included adverse physical health, mental health and emotional health, sleeplessness, and irritability. The people also noted that in

order of high levels of noise pollution the land vehicles and airplanes led the order down to market, construction companies, crowded pedestrians, schools and churches.

Recommendations

1. Enactment of enforceable laws to regulate levels and places where noise pollution should not exist.
2. Educational programmes to bring about the effects of noise to the people and how to avoid it if possible, using the court of law.
3. Getting of heavy noise polluting industries, markets, schools, motor parks airports away from residential areas.
4. Regular appearance of victims of auditory problems for checkup especially those who had been affected by extreme noise level like retired soldiers and babies living around noisy environments.

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