GENDER, AGE AND JOB TENURE AS DETERMINANTS OF HEALTH-SEEKING BEHAVIOURS AMONG NOISE-PRONE INDUSTRIAL WORKERS IN NIGERIA: IMPLICATION OF THE FINDINGS FOR COUNSELING

By
Adebayo David Oluwole, Ph.D.
Department of Guidance & Counsellings,
University of Ibadan, Ibadan
daoluwoledr@gmail.com

&
Titilayo A. Adebowale, Ph.D.
Department of Social Work,
University of Ibadan, Ibadan

Abstract

This study examines gender, age and job tenure as determinants of health-seeking behaviours among noise-prone industrial workers in Nigeria. The study utilised a descriptive epidemiologic cross-sectional survey design. The survey sample size was 400 industrial workers who were randomly sampled from confectionary, construction companies, cement and electrical appliances factories situated in Lagos, Ogun and Oyo states. Occupational Health Scale (OHS) was used to assess the extent of health-seeking behaviour which is the criterion variable in the study. The OHS is rated on 5-point scale, related to three major dimensions of occupational health, namely, physical, psychological and social. The items in the scale cover four areas contributing to the state of comprehensive occupational health that is job characteristics, working conditions (physical), psycho-social work environ-ment, organisational structure and management policies. A piloted split-half reliability of the scale was found to be .92 for this study. Three null hypotheses were tested. The data collected were subjected to analysis of variance (ANOVA) and t-test statistics so as to establish the differences in the mean scores of the variables.Findings also reveal a significant difference in the health seeking behaviour of the participants based on work experience. Further, age (young, $\bar{x}$ =39.33; young, $\bar{x}$ =38.43) of the participants is a strong variable in occupational health seeking behaviours. The t-test statistical values yielded a significant variation in the mean values of young and old workers (n=400, df = 398; t = 3.58). Also, gender (males, $\bar{x}$ =32.19; females, $\bar{x}$ = 40.24) has significant impact on the workers' health seeking behaviour of the workers (n=400,df = 398; t = 3.19).

It is recommended that social workers, and counselling psychologists should mount trainings in educating the stakeholders about preventive health related measures required to maintain their sense of hearing. Information on hearing protection should accompany the purchase of equipment, and other noisy, non-industrial related equipment.

***Keywords**: Occupational noise, gender, experience, industrial workers*

Introduction

For several years in Nigeria, many workers in industrial settings of the country are exposed to several hazards which can lead to disability on the part of the workers. Such disabilities include hearing impairment. Hearing impairment is the most frequent sensory deficit in human population. Globally, over 275 million people are affected and 80% of them are in low- and middle income countries (WHO, 2012). Hearing loss gives rise to problems in recognizing speech, especially in difficult environments, reduced ability to detect, identify and localize sounds quickly and reliably. These sounds may be warning or alarm signals, as well as music and birds singing. Having this communicative disability affects the hearing-impaired people and people in their environment such as family members and fellow workers. Studies have shown that uncorrected hearing loss gives rise to poorer quality of life, related to isolation, reduced social activity, and a feeling of being excluded, leading to an increased prevalence of symptoms of depression (Chadambuka, Mususa, and Muteti, 2013).

The World Health Organisation Programme for the Prevention of Deafness and Hearing Impairment is concerned with developing and promoting strategies for prevention of the major causes of hearing impairment and deafness which constitute public health problems. The World Health Organisation (WHO) carried out an assessment of the global disease burden from occupational noise. Noisy workplaces have a heavy impact on health around the world. Millions of years of healthy life are lost due to occupational noise-induced hearing loss. Globally, 22 per cent of disabling hearing loss in men is caused by occupational noise. Men are generally more exposed than women to excessive noise in the workplace (WHO, 2012).

In developing countries, occupational noise accounted for about 3.8 million years of healthy life on an annual basis in 2000 compared to 0.3 million years in developed countries (Nelson, Concha-Barrientos, Driscoll, Steenland, Fingerhut & Punnet, 2005; Nelson, Nelson, Concha-Barrientos & Fingerhut, 2005). Noise induced hearing loss represents a much heavier burden in developing countries than in developed regions of the world. The difference is mainly due to lack of noise prevention programmes and awareness of the consequences of the excessive noise exposure (Nelson, Concha-Barrientos, Driscoll, Steenland, Fingerhut & Punnet, 2005). Social noise exposure has been increasing over the last 10 to 15 years, including the more developed countries. This occurred particularly through attendance at discos and to a lesser extent through the use of personal stereos (Olishifski, 1998) but has been found without significant effect on hearing threshold levels (Smith & Davis, 1998).

Health-seeking behaviour is a complex psychological construct that refers to series of actions that are taken by individuals on the kind efforts (usual by "self") made to promote good health. (WHO, 1997; Ojanuga & Gilbert, 1992; Street, 2001; Cahill, 1996). This notwithstanding, another study Cahill (1996), reveals that an understanding of the human behaviour is a prerequisite to a change behaviour of the individual in order to improve their health practices. The experts in health and medical services and health policy makers became increasingly aware of the implications of human behavioural factors in ensuring quality health care services and in the provision of materials and equipment to effect this service.

Personal health is in part the result of volitional behaviours. However, a number of biological and environmental factors clearly influence behaviours such as eating, exercise, smoking, and alcohol consumption. These genetic and situational variables, which can be synergistic or oppositional to each other, often pose considerable challenges for the individuals trying to lose weight, sustain a daily exercise regimen, stop smoking, or remain sober. Therefore, researchers who study health behaviours should consider —personal choice "in the context of dispositional, social, and cognitive influences. As a result of the complexity of human behaviour at work place, scientists have sought to elucidate overarching physiological mechanisms or psychological belief systems related to health behaviours. In addition, a variety of psychological theories have been proposed to explain and/or predict health behaviours. In general, these theoretical models include variables that are believed to determine how appealing an alternative behaviour is compared to a current behaviour. Although these theories emphasize the cost-benefit analysis of behaviour, they are characterized by subtle differences in the conceptualization of the contributing factors.

The study of gender and health-seeking behaviour has posed an interesting area that should not be ignored in this type of study. This is because it centres on the differences in access to health care between male and female. In terms of gender, inequality seems to be the major issue on ground as it is surprising to note that even in the delivery of health care services, there is gender inequality. To a higher or lesser extent, inequalities exist in all societies and social classes but in developing countries, mostly among the poor, they are assumed to have more negative impact on female's health. The effects of gender inequalities can be clearly seen when access of female to both preventive and therapeutic measures is significantly lower as can be compared with their male counterpart. Ay, Hayran, Topuzoglu, Hidiroglu, Coskun, Save, Nalbant, Ozdemir, Eker (2009) explore the impact of gender roles in relation to health seeking behaviour during pregnancy and childbirth. They observe that most pregnant women have negative attitude to health seeking behaviour because they depend largely on the household head.

Age appears to have some association with health seeking behaviours and practice in that as the age progresses,

there is the tendency for there to be less regards for certain situations in life as the majority of these would have been gulped by self or personal experience. In most cases one's experience may have nothing to do with the current state of disorder that is being experienced. However, age may constitute or result from wears and tears of body tissue, as a result, there is need for health advice or recommended practices to be sought and adhered to.

In general, the effects of noise on hearing can be divided into three categories: acoustic trauma, temporary threshold shift, and permanent threshold shift. Acoustic trauma is restricted to the effect of a single exposure (for example, explosion and/ or gunshot) that results in an instantaneous breakdown and disruption of the cochlear hair cells. Temporary threshold shift (TTS) is a short-term hearing change, which may follow exposure to noise. TTS refers to an elevation in the threshold of hearing which recovers gradually following noise exposure. Lastly, a permanent threshold shift (PTS) is a hearing change, which persists throughout the life of the affected person following damaging levels of noise exposure.

Since noise-induced hearing loss occurs randomly, not all exposed persons are affected equally. People who are highly susceptible lose their hearing ability faster than others. It may be impossible to determine how much of the hearing loss of a noise-exposed person is due to noise (Harris, 2005). However, in a group of noise-exposed persons, the percentage of the group that has hearing loss depends on the level and duration of noise exposure. Consequently, higher noise exposure levels and longer durations of exposure result in a larger percentage of exposed persons sustaining hearing loss.

Numerous investigations have been conducted regarding the relation of hearing loss due to noise exposure and non-occupational factors. Data on noise exposure in farmers have been collected via interviews, self-reported hearing loss, and analysis of noise exposure measurements in large cohorts (Hwang et al., 2001; Gomez et al., 2001; Marvel et al., 1991). Findings indicated that hearing loss was related to farm noise exposures after controlling for confounding variables. This finding is not considered surprising given the high levels of farm noise exposure. The median lifetime exposure to farm noise above 85 dB *(A),* 8 hours daily, is 4.7 years. Hwang and his colleagues (2001) find that the use of hearing protection was not related to a lower risk of hearing loss when working with noisy farm equipment. This was contrary to health and safety recommendations for reducing noise exposure.

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In a paper, Krishnamurt (2009) analyzes the audiograms of 68 middle-aged and elderly patients attending an audiology clinic who had symmetrical sensorineural hearing loss and "significant histories of occupational noise exposure." The audiograms were age-corrected by subtracting, at every frequency, the mean thresholds for people of the same age group and sex from a population-based survey. The corrected thresholds were considered by Krishnamurti to represent noise-induced permanent threshold shift (NIPTS). Analysis of variance reveals that NIPTS varied by both age and audiometric frequency: the largest NIPTS values were seen at younger ages and at 2 kHz.

Unfortunately, the age-corrected thresholds analyzed in this paper cannot be considered to represent noise-induced changes for two reasons. First, the criteria for "significant history of occupational noise exposure" were unstated (many "noisy" jobs do not reach the level of hazardous noise exposure). The second and more important problem is selection bias: the subjects were almost certainly self-selected for severity of hearing loss. Most people who choose to attend an audiology clinic believe that they have difficulty hearing, and most of them indeed are found to have substantial hearing impairment. Obviously, such patients will have hearing thresholds that are worse than those in the general population. Age-corrected thresholds will, therefore, represent the degree to which people who think they are hearing-impaired hear worse than people of the same age and sex in the general population. Such age-corrected thresholds would be positive (on the average), even for patients who had never had occupational noise exposure (higher thresholds mean worse hearing).

Middle-aged people hear much better than elderly people; mean audiometric thresholds increase with age. If the degree of hearing impairment that motivates attendance at an audiology clinic were constant across the age spectrum, it would follow that the age-corrected thresholds of elderly patients would be lower than the age-corrected thresholds of middle-aged patients. That is what we would expect whether or not the patients were noise-exposed, and that is what was found (Krishnamurti, 2009).

The purpose of this investigation was to generate a foundation for hypotheses in a sample of Nigerian workers to determine the factors that may be associated with the industrial workers' health belief and occupational health behaviours.

Hypotheses

The following hypotheses were tested at 0.05 level of significance.

Hypothesis 1: There will be no significant difference in the health seeking behaviours of workers based on their job experience.

Hypothesis 2: There will be no significant difference in the health seeking behaviours of young and old workers.

Hypothesis 3: There will be no significant difference in the health seeking behaviours of male and female workers.

Methodology

The study design is a descriptive

epidemiologic cross-sectional survey, in which the status of an individual with respect to the health seeking behaviours about hazards in his occupation was assessed. The survey sample size was 400 industrial workers. They were randomly sampled from confectionary, construction companies, cement and electrical appliances factories. These are: De United Foods Industry Limited, Lagos; Akinwale Construction Company Limited; Ewekoro Cement Factory, Ogun state; Fisco Electrical Company Nigeria Limited in Ibadan, Oyo and Intercontinental Distilleries Limited, Ogun State.

Measure

Data to answer these questions came from Occupational Health Scale. Section A includes demographic information such as age, gender, job cadre, job experience and educational qualifications. The questionnaire on Occupational Health Scale (OHS) was developed by Bhardwaj and Srivastava (2008) to assess the extent of occupational health. The 63 items in the OHS is rated on 5-point scale, related to three major dimensions of occupational health, namely, physical, psychological and social. The items in the scale cover four areas contributing to the state of comprehensive occupational health, i.e. job characteristics, working conditions (physical), psycho-social work environment, organisational structure and management policies. A piloted split-half reliability of the scale was found to be .92 for this study.

The data collected were subjected to analysis of variance (ANOVA) and t- test statistics so as to establish the differences in the mean scores of the variables.

Results

Hypothesis 1: There will be no significant difference in the health seeking behaviours of the workers based on their different levels of experience.

Table 1: Univariate analysis of variance of health seeking behaviours based on experience

Source	Sum of square	Df	Mean of square	F	Sig.
Regression	3446.276	2	1723.13	14.292	0.05
Residual	26162.276	397	65.89		
Total	29608.527	399			

The first set of analysis in which analysis of variance was employed to determine the significant effect of years of experience on the industrial workers' health seeking behaviours. The participants' work experiences are classified into 3 levels. These are 1-5 years, 6-10 years and 11-15 years. The significance of the F value ($_{2,397}$14.29) indicated that the length of service in the industrial site could influence their

occupational health seeking behaviours.

Hypothesis 2: There will be no significant difference between young and old workers' health seeking behaviours.

Table 2: T test comparison of young and old workers' health seeking behaviours

Variables	N	X	SD	Df	t	Sig.
Young	224	39.33	11.20	398	3.58	0.05
Old	176	38.43	11.322			

The second proposition confirms that age of the participants is a strong variable in occupational health seeking behaviours. The t-test statistical values yielded a significant variation in the mean values of young and old workers (n=400, df = 398; t = 3.58).

Hypothesis 3: There will be no significant difference between male and female workers' occupational health behaviours.

Table 3: T test comparison of male and female workers' health seeking behaviours

Variables	N	X	SD	Df	T	Sig.
Males	302	32.19	11.07	398	3.19	0.05
Females	98	40.24	9.25			

The t-test analysis showed that the third proposition which examined the influence of gender of the participants as a variable of interest in occupational health behaviour is rejected. The t-test statistical values is significant in the workers' health belief (n=400,df = 398; t = 3.19).

Discussion

In investigating the health belief status sample of some Nigerian industrial workers about occupational hazards, it is revealed that there is significant difference among workers irrespective of the number of years they might have put in. This may not be unconnected with the nonchalant attitude grounded in ignorance in health safety measures of both workers and employees about safety laws and regulations in the industrial precincts.

The in-home health screening and questionnaire data collected during this study provided a unique depth to this investigation. The results of this study, in addition to other studies, have well established that there is a higher prevalence of hearing loss among industrial workers than others in general adult population (McMahon, 1988; Bean, 1991; McCullough et al., 2002).

One must bear in mind that the more experienced an individual gets the older he becomes. As a result of this, age is therefore a confounding factor here. For instance, when investigating the natural loss of hearing due to aging (presbycusis), one needs to be mindful to take other factors into consideration, such as diet, drugs, noise exposure, cardiovascular disease, and climate, as these factors have a cumulative effect (NIDCD, 2015). This study, however, did not measure these factors although experience was found to be significant indicator of health belief.

While examining the influence of age on the workers' health belief, the result indicated that age of the participants is a strong variable in occupational health seeking behaviours. This is corroborated by the study of Krishnamurt (2009) who noticed hearing depreciation with advance age.

The third proposition stated that there will be no significant difference between male and female workers' occupational health behaviours. The result showed that males do have positive health behaviour than their female counterparts. This may be as a result of males having higher self efficacy because they are used to the work life as their main preoccupation. Also, male workers are known to be ever positive about their health to the point of death for cultural reasons since men must not betray their emotions. However, the finding contradicts those of Karlovich, Wiley Tweed and Jensen (1988), Ejericito, Hansen and Pierce (1989) who have shown in their studies that women have greater resistance to noise-induced hearing loss than men.

Further, numerous studies have shown that women have greater resistance to noise-induced hearing loss than men. In a study mentioned previously, Karlovich and his colleagues found that at higher threshold frequencies, male fanners had more significant hearing loss than did females (Karlovich et al., 1988). This may be associated with the reckless abandonment most male workers use to conduct their lives. They are not careful in taking to simple instructions at times because of their adventurous approach to life.

Implication of the Findings for Counselling and Social Work Practice

Although regulations and programmes are in place in some industries, no regulations exist for limiting hazardous exposures outside the workplace. For example, there are numerous sources of noise in the environment that have the potential to produce noise-induced hearing loss.

The findings of this study led to the conclusion that there is need for labour inspection to ensure sound occupational health/safety issues, decent work and promotion of rights at work. Also, social workers, and counselling psychologists have significant role to play in educating the public about preventive health related measures required in their career life.

From the foregoing, it is recommended that increased educational efforts must be made in the area of hearing loss prevention. Information on hearing protection should accompany the purchase of equipment, and other noisy, non-

industrial related equipment. Workers need to be made aware that noise exposure often has a cumulative effect on hearing and hearing loss may go unnoticed.

There is need for improved engineering control efforts, including replacing and/or modifying noisy industrial equipment, in order to reduce the impact of such equipment on hearing. Hearing protection should be more readily available to workers and their families. More research is needed on the impact of non-industry occupational and recreational noise exposures that contribute to workers' hearing loss.

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