ASSESSING THE PREVENTIVE PRACTICES OF WORKERS REGARDING OCCUPATIONAL HEALTH HAZARDS IN ENUGU STATE, NIGERIA

Dorothy I. Ugwu, Ph.D.
Department of Health and Physical Education
University of Nigeria Nsukka

Abstract
The study assessed the preventive practices regarding occupational health hazards among workers in Anambra Motor Manufacturing Company (ANAMCO), Enugu, Nigeria. The descriptive survey design was used for the study. The population for the study consisted of 521 workers of ANAMCO. The instrument used for the study was the Occupational Health Hazard Preventive Practices Questionnaire (OHHPPQ), which was designed by the researcher. The face validity of the instrument was determined through the judgement of three experts from the departments of HPE and Social Sciences in UNN. Split half reliability of .85 was obtained for the instrument. Stratified sampling technique was used to draw sample for the study. Frequency, percentages and chi-square statistics were used for data analysis. Results revealed that workers' acceptance of protective devices depends on their belief that the devices give them minimal discomfort; when management breach the contractual agreement regarding the provision of protective measures, it dampens workers' interest in obeying workplace regulations and finally, the junior workers differed significantly from the senior workers in their adoption of preventive practices regarding occupational health hazards. Following from these findings, it was recommended, among others, that more workshops, seminars and training should be organized for all workers, especially the senior workers in order to reduce their risk taking practices.

Keywords: Preventive Practices, Workers, Occupational Health, Hazard, Job Status

Introduction

The industrial revolution that took place in Europe and America between 1760 and 1830 led to profound social change, with rapid urbanization in the world (Harrison, 2012). This resulted to significant industrial change and subsequently, brought to limelight the issues and problems facing workers in the world of work. Job characteristics, environmental context, and the desire by management practitioners to maintain high level of productivity even at the detriment of the workers' health are some predisposing factors of occupational hazards (Jadab, 2012).

With total neglect of the harmful effects of occupational hazards in developing nations like Nigeria (Owumi, 1997), the progress achieved towards improving human health in the world of work in developed countries is at risk since the world is turning into a global village. Consequently, there is a need to intensify research efforts in health related issues in the world of work since workers spend two-thirds of their active life in the work environment, other than the home environment (Reason 2010). Stressing the importance of research in this area, Pingle (2012) advocates for safety surveys at different levels in order to generate data on the nature, scope and the extent to which workers are aware of, and adopt proper measures to avert the occupational health hazards associated with their work environment.

The term occupational health refers to the promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations (International Labour Organization – ILO, 2001). Occupational health according to ILO should address the issues of prevention amongst workers, of departures from health caused by workers' working conditions; the protection of workers in their employment from risks resulting from factors adverse to health; the placing and maintenance of the worker in an occupational environment adapted to his physiological and psychological capabilities and finally the adoption of work to man and of each man to his job. It therefore implies that workers should maintain a working culture geared towards an adoption of essential value system in protecting themselves and in averting hazards in their work environments. Contrary to this, workers are likely to encounter health hazards in their work environment.

Occupational health hazard is defined as the potential risks to health and safety of workers in their workplace. World Health Organization –WHO (1999) noted that about 70 percent of adult men and up to 60 percent of adult women throughout the world encounter occupational health hazards annually. The WHO also observed that the specific occupational health hazards faced by workers

depend on the region and its economic standing. To this effect, WHO acknowledged that occupational health hazards are more prevalent in the rapidly industrializing countries than in the developed countries of the world because the former use technologies that are less advanced.

Omolulu (1997) identified many hazards in Nigerian workplaces to include excessive heat, excessive cold, harmful dusts and spores, toxic chemical exposures, light radiations and repetitive tasks. Adeoye, Bedibele and Onakpoya (2011) observed humidity, respective tasks, explosion hazards and physical work load as hazards encountered by Nigerian workers. WHO (1997) had already classified, industrial hazards in terms of mechanical; ergonomically poor working conditions, biological agent; physical factors, reproductive hazards; allergenic agents; chemical hazards; social hazards and psychological stress. This study explored the nine classifications of hazards put forward by WHO (1997) because despite of a plethora of legislations at national and international levels that were made to protect the workers in our various organizations for instance, the International Labour Organization Occupational Safety and Health Convention No 171 (Harrison, 2012) and despite various safety mechanisms and devices suggested to managements and workers to upgrade and maintain the standard and safety of work environment, studies (Aliyu and Shehu 2006; Dawodu and Omoti, 2010; Merler, Evcolonelli and Deklerk, 2000; Benedyk and Minister, 2010) have proved that workers in Nigeria and other parts of the world still encounter injuries and diseases in their job and work environment. Following from this, the study assessed the preventive practices adopted by workers against occupational health hazards.

Preventive practice is defined as any organizational or individual based activity that is geared towards eliminating or reducing accidents and diseases in the workplace environment (Malek, Adel, Amal and James, 2010). All workplace hazards (chemical, physical etc) can be prevented and controlled by a variety of methods (Harrison, 2012). The goal of controlling hazards according to WHO (1997) is to protect workers from the risk of occupational hazards. ILO (2001) had identified five general categories of control measures to include, eliminations, substitutions, engineering, administrative controls and personal protective equipment. Jadab (2012) maintained that the prevention of occupational diseases should centre on explaining to workers the hazards of every operation they perform. Chien, Ton, Lee, Chia, Shu and Wu (2003) suggested that the best approach to reducing the harmful effects of the products is to recycle the end products. Keyserling (2006) suggested that workers' acceptance of protective devices depends partly on their belief that the devices are effective in preventing injuries and partly on the comfort derived from the use of such protective devices. Volinn (2012) also agreed that it is only when the workers accept a particular protective device and are motivated to use it that one hopes to achieve a measure of success.

Some theories have tried to explain peoples' reactions to obnoxious events (occupational health hazards) in order to avert the aversive stimuli. One of such theories is Fisher and Fisher (1992) theory of Reasoned Action (RA). According to this theory, one of the determinants of occupational health hazard prevention is the belief in their negative impacts on human health and their severity. It suggests that individuals are likely to adopt healthy behaviour if they perceive that they are susceptible to illness, consequences of infection are severe, and effective solutions exist. It is therefore assumed that workers and/or management of the organization are likely to adopt one or more preventive measures if they are aware that the work conditions are not free of potential dangers (hazards); consequences of these hazards to workers' health are severe; and effective ways of averting such situation exist (prevention). The study assessed workers' job status in relation to their preventive practices regarding occupational health hazards which clarifies the preventive practices adopted by the senior and junior workers against their workplace health hazards.

Study by Donald and Young (2012) showed that the junior workers reported more accident rates than their senior counterparts, indicating that the senior workers took more precautionary measures than the junior workers. Zhao, Bogossion and Turner (2012) also found significant difference in the preventive practices adopted by the senior and junior workers, with the junior workers showing higher preventive practices than their senior counterparts. However, Cox and Flin (2011) argued that health hazards which result from unsafe behaviour spread across the various segments of workforce, pointing out that the causes of accidents are the characteristics of work and organizational environments and the psychological and behavioural characteristics of the individual.

The above reviewed studies presented conflicting findings. Also, most of the studies sampled workers from other countries who do not share the same work environment with Nigerian industrial

climate. This obviously created impetus for the need to carry out study in this area using Nigerian sample.

Purpose of the Study

The purpose of the study was to assess the preventive practices of workers regarding occupational health hazards in Enugu State, Nigeria. Specifically, the study:

1. Assessed the preventive practices of workers against occupational health hazards.
2. Assessed job status influenced preventive practices of workers against occupational health hazards.

Research Questions

1. What are the preventive practices of workers against occupational health hazards?
2. What is the influence of job status on the preventive practices of workers against occupational health hazards?

Hypothesis

There is no statistically significant difference between senior and junior workers on preventive practices they adopt against occupational health hazards ($p<.05$).

Methods

The study adopted the descriptive survey design. The study was carried out in Anambra Motor Manufacturing Company (ANAMCO), which situates in Enugu state, Nigeria. ANAMCO assembles and fabricates car spare parts and uses some chemicals that are hazardous to health of workers. Hazards associated with the nature of their job include: physical hazards, mechanical hazards, ergonomically poor marking conditions, chemical hazard, psychological stress, social conditions, reproductive hazards and allergenic agents. The worker's exposure to these hazards formed the bases for the choice of the company for the study. The population for the study consisted of all the 521 workers of Anambra Motor Manufacturing Company (ANAMCO), Enugu. Out of this number, 304 of them were junior workers while 217 of them were senior workers. The sample for the study was 261 workers selected by means of stratified sampling technique. Available data on the number of workers per section allowed for stratification of sample proportionately according to sections. In other words, workers were selected from the eight sections that make up the company in proportion of 1:2 of junior and senior workers in each section. The sections are: administrative with 46 workers, mechanical 152, assemblage 142, health unit 62, security 43, bursary 38, catering 18 and laundry 20 workers.

The instrument used for data collection in the study was Occupational Health Hazard preventive Practices Questionnaire (OHHIPQ) to measure the preventive practices of workers against occupational health hazards. The questionnaire consisted of two sections. Section A deals with the demographic variable of job status, while section B comprised 10-items that measured workers' preventive practices regarding occupational health hazards. Respondents were requested to tick "yes" or "no" where appropriate in response to the question items.

The face validity of the instrument was determined through the judgement of three experts from the department of HPE and Social Sciences in UNN. In order to establish the reliability of the instrument, 96 copies of the instrument were administered to workers of Emenite Nigeria Ltd, Enugu. The Product Moment Correlation coefficient was used to determine the split-half reliability of the instrument. The split-half reliability of .85 was obtained. This was corrected with spearman Brown formular, = .92, to estimate the validity of the instrument.

In order to facilitate the distribution of the questionnaire, the researcher raised an introductory letter to the General Manager Personnel Unit of the organization. A total number of 261 copies of the questionnaire were distributed to the workers and this was done through the eight sectional heads of the company. The time allotted for the filling of the questionnaire was thirty minutes and these were filed and collected on the spot. A hundred percent return rate was achieved with 221 copies correctly filled. This yielded a return rate of 86.73 percent. Frequency, percentage and chi-square were used to analyze data on preventive practices of workers regarding occupational hazards. The research questions were answered using frequencies and percentages, while the hypothesis was tested using the chi-square statistics

Results

Table 1. Preventive Practices of Workers against Occupational Hazards

	Items	Yes	%	No	%
1.	The management of this organization sends us on periodic training on safety devices	124	56.10	97	43.90
2	Workers of this organization are not provided with safety gadgets	24	10.9	197	89.1
3	I put safety devices such as ear protector in our work environment	129	58.4	92	41.6
4	The management does not regularly review and monitor equipment used for production	71	32.1	150	67.9
5	I observe work shift as introduced by the management of this organization	221	100	0	0
6	The management of this organization does not have a social welfare scheme	178	80.5	43	19.5
7	I observe most of the rules and regulations stipulated in my place of work against hazards	55	24.89	166	75.11
8	Some of the high temperature protective devices are outdated and as such I do not put them on while on duty	205	92.76	16	7.25
9	I try as much as possible to put into practice the entire preventive practices taught in the seminars and workshops.	114	51.58	107	48.42
10	I do not remember to put on the vibration protective devices	40	18.10	181	81.90

The answer to research question 1 is shown in Table 1 above. The table showed that (56.10%) and (43.90%) of the workers agreed and disagreed respectively on the question that management sent them on periodic training. About (89%) percent agreed that they were provided with safety gadgets while only (58%) of the sample said they put on the safety devices. As to whether management of the organization monitored the equipment regularly, (67%) agreed that management did monitor the equipment. All the workers (100%) agreed that they observed the shift work as introduced by the management while eighty (80%) percent of the participants reported that management did not have welfare scheme for workers.

Seventy-five percent of the participants said that they did not observe most of the rules and regulations stipulated by the organization and (92.76%) also agreed that they did not put on the safety devices because they were outdated.

Regarding whether workers put into practice the preventive practices taught in the seminars and workshops about (58%) said they did not. Most of the workers, (82%) agreed that they did not remember to put on vibration protective devices.

Table 2: Influence of Job Status on the Preventive Practices of Workers Regarding Occupational Health Hazards

	Items	Senior (n =122)		Junior (n=99)	
		F	%	F	%
1.	The management of this organization sends us on periodic training on safety devices	69	56.59	55	55.5
2.	Workers of this organization are not provided with safety gadgets.	106	87	89	92
3.	I put safety devices such as ear protector in our work environment.	79	65	50	51
4.	The management does not regularly review and monitor equipment used for production	95	78	55	56

5.	I observed work shift as introduced by the management of this organization	122	100	99	100
6.	The management of this organization does not have a social welfare scheme.	82	67	76	77
7.	I observe most of the rules and regulations stipulated in my place of work against hazards.	12	10	43	43
8.	Some of the high temperature protective devices are outdated and as such I do not put them on while on duty.	109	89	96	96.97
9.	I try as much as possible to put into practice the entire preventive practices taught in the seminars and workshops.	64	52	50	51
10.	I do not remember to put on the vibration protective devices.	91	75	90	91

Table 2 revealed that the junior workers took more preventive measures than the senior workers. Items 2, 6, 7, 8 and 10 indicated that the junior workers adopted more preventive practices while only item 4 showed more preventive practices among the senior workers. However, the workers showed almost equal levels of responses in all other items tested (Items 1, 3, 5 and 9).

Table 3. Difference between Senior and Junior Staff Workers on Preventive Practice Regarding Occupational Hazards

	Items	**n**	**Calx2** Value	**Table** X^2	**P**	**df**
1.	The management of this organization sends us on periodic training on safety devices	221	0.08	3.84	p>.05	1
2.	Employees of this organization are not provided with safety gadgets.	221	11.35*	3.84	P<.05	1
3.	I put safety devices such as ear protector in our work environment.	221	0.08	3.84	p>.05	1
4.	The management does not regularly review and monitor equipment used for production	221	59.80*	3.84	P<.05	1
5.	I observe work shift as introduced by the management of this organization.	221	2.87	3.84	P>.05	1
6.	The management of this organization does not have a social welfare scheme.	221	14.74*	3.84	P<.05	1
7.	I observed most of the rules and regulations stipulated in my place of work against hazards.	221	2.58	3.84	P>.05	1
8.	Some of the high temperature protective devices are outdated and as such I do not put them on while on duty.	221	23.73*	3.84	P<.05	1
9.	I try as much as possible to put into practice the entire preventive practice taught in the seminars and workshops	221	13.49*	3.84	P<.05	1
10.	I do not remember to put on the vibration protective devices	221	3.85*	3.84	P<.05	1

* = significant at .05 ($p<.05$)

Table 3 showed that items 2 ($x^2=11.35, p<.05$) ; 4 ($x^2 =59.80$, $p<.05$), 6 ($x^2 =14.74$, $p<.05$), 8 ($x^2 = 23.73, p<.05$), 9 ($x^2 =13.49 p<.05$) and 10 ($x^2 =3.85 p<.05$) are significant because the calculated x^2 of the items are greater than the table x^2. This implies that there were significant differences between junior and senior workers on preventive practices. The junior workers showed significantly higher preventive practices than their senior counterparts by indicating more precautionary measures in four out of the six question items found significant. Therefore, the null hypothesis was rejected. However, no significant differences on preventive practices regarding occupational health hazards were found between junior and senior workers on items 1, 3, 5 and 7.

Discussion

Result in Table 1 presented contradictory responses from the ANAMCO workers. For instance, while majority of the workers disagreed that the management provides them with safety gadgets they also maintained that they put safety devices such as ear protector in the course of performing their jobs. Regarding whether workers observed work shift as introduced by the management, majority agreed that they observed the shift work, but they however, maintained that the management does not provide them with social welfare scheme as entrenched in the organizational work rule. Workers also revealed that some of the protective devices are outdated, which hinders them from putting them on while working. This is in line with Keyserlin (2000) and Volinn (2012) various suggestions that workers' acceptance of protective devices depends partly on their belief that the devices are effective in preventing injuries and partly on the comfort derived from the use of such protective devices. This implies that workers' acceptance of protective devices depends on their belief that the devices are effective in protecting them, and when such devices give workers minimal discomfort.

Furthermore, management's breach of the contractual agreement regarding the provision of welfare scheme to workers may have dampened workers' interest in obeying workplace regulations, preventive practices inclusive. Perhaps, that may explain why majority of the workers reported that they do not observe most of the rules and regulations as stipulated in their work organization.

Result in Table 2 showed that the junior workers took more preventive measures than the senior workers in most of the items investigated. Similarly, the result of the chi-square in Table 3 indicated significant difference between the junior and senior workers on their preventive practices, showing that the junior workers adopted more preventive measures than the senior workers. This finding is in congruence with Donald and Young (2012) and Zhao, Bogossion and Turne (2012) whose various results showed significant differences in the preventive practices adopted by senior and junior workers. However, the result contradicted Cox and Flin (2011) argument that health hazards which result from unsafe behaviour spread across the various segments of workforce, irrespective of job status. While the junior workers reported that management does not provide them with gadgets, the senior workers answered in the contrary. This suggests that the junior workers may be reporting what they experienced in their workplace since they worked in shop floors where such gadgets are required but not provided by the management, while the senior workers could be taking their responses in defense of the policy, which they participated in formulating. As to whether management of the organization regularly reviewed and monitored equipment to ensure accident free work environment, the senior workers affirmed that management embarked on safety audit. The junior workers, however, disagreed with that statement. This could be explained by the fact that as workers climb occupational ladder, they participate in decision-making and as well benefit in pension scheme and therefore are more likely to hold positive views about the management. In addition, the senior workers may feel that objectively reporting what is prevalent in the working place may amount to exposing the organization's inefficiencies. In the same vein, the senior workers agreed that the management has welfare scheme, which is contrary to what the junior workers reported. Since the senior workers are provided with some organizational privileges such as pension sharing plans, bonus and other rewards attached to their offices, they are more likely to defend the policies of the company. The junior workers reported that they did not put on some of the high temperature protective devices. This is in line with the suggestion of the Reasoned Action theory of Fisher and Fisher (1992), which the present study is anchored. This theory posits that workers are likely to adopt preventive measures if they know the consequences of such hazard. To this, it could be that the junior workers are not well informed about the dangers of not using such device in performing their jobs.

Conclusion

The study assessed the preventive practices of ANAMCO workers regarding occupational health hazards. The findings showed that workers' acceptance of protective devices depends on their belief that the devices give them minimal discomfort. Result also showed that when management breach the contractual agreement regarding the provision of some necessary measures needed for workers to protect themselves in the workplace environment, it dampens workers' interest in obeying workplace regulations. Furthermore, the findings indicated that the junior workers took more preventive measures than the senior workers. Similarly, the result showed that there is significant difference in the preventive

practices adopted by the senior and junior workers, with the junior workers showing higher preventive practice then the senior workers. It then implies that the workers do not understand properly the health implications of working without the use of protective devices. It equally shows that management is not putting in their best in provision and enforcement of use of protective devices among workers, especially among the senior workers. Furthermore, the finding implies that the senior workers are relapsing in the use of available protective devices.

Recommendation

It is therefore recommended that:

1. More workshops, seminars, training, re-training on safety practices should be organized for all cadres of workforce, especially the senior workers in order to reduce their risk taking practices.
2. The management should try and show stronger and true commitment to the provision and enforcement of use of safety devices among workers.
3. New workers should be given proper orientation regarding the prevalence of hazards; their susceptibility and the implications of their exposure to hazards in their workplace environment.

References

Adeoye, A. O., Bedibele, C. O., & Onakpoye, O. H. (2011). Awareness and utilisation of protective eye device among welders in a South Western Nigerian Community. *Annals of African Medicine, 10*(4), 29-49.

Aliyu, A. A., & Shehu, A. U. (2006). Occupational hazards and safety measure among stone quarry workers in Northern Nigeria. *Nigerian Medical Medicine, 50*(2), 42-47.

Benedyk, R., & Minister, S. (2010). Applying the besafe method to product safety evaluation. *Applied Ergonomics, 29*(1), 5-13.

Chien, Y.C., Ton, M., Lee, T., Chia, H., Shu, Y., & Wu, L. (2003). *The science of the total environment.* Amsterdam: Elsevier Science.

Cox, S. J., & Cox, T. R. (2011). *Safety systems and people.* Oxford: Butterworth-Heinemann.

Dawodu, O. A., & Omoti, A E. (2010). Occupational eye injury among Sawmill workers in Nigeria. *Asian Journal of Medical Sciences, 2*(5), 233-236.

Donald, I., & Young, S. (2012). Managing safety: An attitudinal-based approach to improving safety in organisations. *Leadership and Organisational Development Journal, 17,* 13-20.

Fisher, R.A., & Fisher, R.P. (1992). A meta-analysis of the correlates of role conflict and ambiguity. *Journal of Applied Psychology, 68,* 320-333.

Harrison, J. (2012). Occupational safety and health in the United Kingdom: Securing future workplace health and wellbeing. *Industrial Health, 50,* 261-266.

International Labour Organisation (2001). *Norms in occupational health context*. ILO Publications.

Jadab, K. B. (2012). Occupational health hazards and management for industrial workers. *Odisha Review, 01,* 64-99.

Keyserlin, W. M. (2006). Workplace risk factors and occupational musculoskeletal disorders. *American Industrial Health Perspective, 112(51), 676-689.*

Malek, M., Ade, E., Amal, E., & James, S. (2010). The correlation between safety practices in construction and occupational health. *Management Science and Engineering, 4*(3), 01-09.

Merler, E., Evcolonelli, M., & Deklerk, N. (2000). Identification of mortality among Italian migrant workers. *Epidemiological Prevention, 6,* 255-261.

Owumi, B. (1997). The hospital work environment: A study of occupational hazards associated with nursing as an occupation. In F. Adewumi & F. Omolulu (eds.), *Death by instalment: Occupational health and hazards in Nigeria,* (pp. 145-153). Ibadan: Emmi Press.

Pingle, S. (2012). Occupational safety and health in India: Now and the future. *Industrial Health, 50,* 167-171.

Reason, J. (2010). Achieving a safe culture: Theory and practice. *Work and Stress, 12,* 293-306.

Volinn, E. (2012). Do workplace intervention present low-back disorder? If so, Why?: A methodologic commentary. *Ergonomics, 42*(1), 258-272.

World Health Organisation (1999). *Hazards prevention and control in the work environment: Air born dust.* World Health Organisation Document, Geneva: WHO Publication.

World Health Organsiation (1997). *Protection of human environment. Extracts from health and environment in sustainable development*. Geneva: WHO Publications.

Zhao, I., Bogossion, F. & Turner, C. (2012). Shift work and work related injuries among healthcare workers: A systematic review. *Australian Journal of Advanced Nursing, 27*(3), 62-74.