



Knowledge and Attitude of Construction Workers Towards Accident and Injury Prevention and Control

Sani S.¹, *Azumamah Y.C.², Amadi A.N.³, Amadi C.O.A.³

¹Building and Construction site, HaddockQuest Engineering and Construction Limited
Madobi, Kano State, Nigeria

²Department of Optometry, Federal University of Technology, Owerri, Nigeria

³Environmental Health and Safety Unit, Department of Public Health Technology,
Federal University of Technology, Owerri, Nigeria
youngazuamah@yahoo.com

ABSTRACT

Accidents and injuries at work places especially in the developing countries, often lead to death and disability. This study was carried out to determine the knowledge and attitude of construction workers towards accident and injury prevention and control, at Haddock Quest Engineering and Construction Company in Madobi Local Government Area, Kano State, Nigeria. A total of 120 subjects were interviewed with the use of questionnaires. The mean age of the subjects was 30.73 ± 8.4 . Results obtained showed that when the workers were questioned about their knowledge of accident and injury prevention measures, 55.8% of the workers were aware of the prevention measures while 44.2% was not aware. While 48.3% were aware of the

dangers associated with workplace, 51.7% were not. On health education programs received, 45% said "yes" while 55% said "no". Also 55.8% complied with the use of personal protective equipment while 44.2% did not. Seminars, workshops and health education programs to educate workers on accident and injury prevention measures are advocated.

Keywords: Accident, injury, knowledge, prevention, control

INTRODUCTION

The construction industry contributes significantly to the social and economic development in all countries of the world. When compared with other labor intensive industries, the construction industry has historically experienced a disproportionately



high rate of disability injuries and fatalities for its size¹. This situation is worse in developing countries, particularly Nigeria where there are no reliable sources of data for such accident records. Currently, Nigeria is relatively experiencing a strong growth in construction activities. Generally, the integration of health and safety measures into the total quality management system within the construction sector could significantly contribute to cost efficiency, quality assurance, environmental sustainability, better employee-employer relation and satisfaction. Nevertheless, divergent perceptions, behaviors and actions exhibited by construction workers lead to serious accidents on site. This state of affairs has been linked to different cultural backgrounds. These cultural differences, according to authors^{2,3,4} have significant impacts on industrial safety climate. Adequate considerations of these differences help to understand different approaches to accident prevention and safety management.

An accident could be seen as a non-deliberate, unplanned event that may produce undesirable effect, and is preceded by unsafe, often avoidable acts and condition⁵. Among the factors that contribute to accident proneness in an individual are

pre-existing medical condition (illness), tiredness and fatigue, emotional condition such as depression, tension, anxiety, compulsion, and emotional stress, other factors may include poor vision, senility, physical handicaps and frequent use of mood-modifying drugs including alcohol⁶. Accidents are unpleasant, unexpected, unforeseen or unintended happenings, sometime resulting from negligence that result in injury, loss, damage and is caused by a mistake or machine failure or natural disaster, or sabotage. They cause mishap, ruin, destruction, injury and death^{7,8,9}. An injury on the other hand is a physical damage to the body or body part, often resulting in some form of disability of limitation of activity⁵. Injuries are in general, caused by improperly controlled release or application of various forms of kinetic energy. Energy forms considered include thermal energy for burn injuries, mechanical energy for fracture, gun-shot wounds and contusions; electrical energy for shock, chemical energy for burns. Controlling the marshaling of such energy, limiting the dose reaching the host, preventing host exposure to the sources of the relevant energy and modifying host susceptibility to the damaging effect of these energies are important strategies for the prevention of



injuries. All emphasis should be placed on passive measures that demand minimal compensatory adjustment in behavior of the host or person at risk to achieve prevention and control. Upstream measures have a greater public health value over downstream measures⁷. Injuries have traditionally been regarded as random and unavoidable and may occur as both an unintentional and intentional harm¹⁰. Injuries, like any other disease, are the outcome of pathological process; the general principles of epidemiology and prevention of disease are equally applicable to injuries.

Knowledge and attitude of the workers is crucial to the prevention of accidents and injuries which occur in industries. Occupational hazards are among the leading causes of permanent disability and death in most developing countries and this is because there is inadequate regulation and control, inadequate knowledge concerning occupational hazards and poor implementation of existing of occupational safety programs which result in unnecessary harm to workers. The objective of this study is to determine the knowledge of construction workers at Haddock Quest Engineering and Construction Company toward the accident and injury control

measures, the dangers associated with their work and work environment and their attitude toward compliance with safety measures.

MATERIALS AND METHODS

The area of study was Haddock Quest Engineering and Construction Company located at Madobi Local Government Area of Kano State, Nigeria. The main work of this company is construction of roads, building of housing estates, and repair of roads. Construction workers comprises people from different parts of Nigeria, speaking different languages such as Hausa, Igbo, Yoruba and other languages within the minority groups in the country. This study was a descriptive study designed to investigate the knowledge and attitude of the construction workers toward accident and injury prevention and control. The simple random sampling technique was used to obtain a sample size of the total population of construction workers. Only workers who satisfied the inclusion and exclusion criteria were used. A structured questionnaire was given to the workers which they completed and returned for computation of data.

RESULTS



A total of 120 workers were selected using the simple random sampling technique and were interviewed. The males were 75 (62.6%) while females were 45 (37.4%). Distribution of the age groups, gender, marital status, educational status and years of experience of the workers is shown in table 1. The response of workers towards questions on their knowledge and attitude toward accident and injury prevention is shown in Table 2. From the table, while 55.8% were aware of accident and injury prevention measures set up by the company, 44.2% were not. 45% of the workers said they had received health education program in the company while 55% said they had not. On the knowledge of the financial implications of accident and injury, 65.8% responded “yes” while 34.2% said “no”. While 48.3% were aware of the dangers associated with work place, 51.7% were not. 55.8% of the workers complied with the use of personal protective equipment (PPE) provided by the company while 44.2% did not. Also 49.2% believed in the management’s commitment in providing personal protective equipment for the workers while 50.8% did not. When asked on the availability of functional health service for the workers, 58.3% said “yes” while 41.7% said “no”.

DISCUSSION

Construction work requires agility, strength, steadfastness and maximum concentration; qualities that are more profound in the youth, hence, no surprise at the high percentage of construction workers among the youth. Fatigue frequently sets in among the workers and they require some rest from time to time. Obviously, this is not a work for the elderly. They are weak and tend to be more vulnerable to falls and other accidents^{11,12}. It is interesting to note however from this study, that more females are venturing into this profession that used to be male dominated. This could be as a result of the high level of unemployment in Nigeria which causes women to take the challenge of finding jobs that are physically demanding. Most of the work they do is labor work that involves carrying of sand, gravel, stones, water and assisting the men. Construction work does not necessarily involve getting a University degree, hence, the low level of educational status of the workers. Among these workers, just 19.2% has acquired training in a tertiary institution. Most of them (65.8%) stopped at secondary education. They acquire their training either through a vocation (15%) or by learning on the job as an apprentice. This lack of proper training makes these workers unaware of the safety



and preventive measures necessary for their work. Other researches^{13,14} also reported a lack of proper training among construction workers. Only 15% of the workers have more than 10 years working experience. This goes to show that as the workers get older, they chose another line of work or get into managerial positions leaving the labor work for the young and inexperienced workers. Others may quit due to financial reasons as construction work does not pay much in Nigeria compared to the economic demands the workers face. They have to feed their family, pay their house rent, send the children to school and plan for the future. Their income may sustain them when they are young with fewer responsibilities, but can't sustain them when their families grow bigger. When the workers questioned on their knowledge of accident and injury prevention methods, 55.8% claimed to know the preventive measures while 44.2% was unaware of the preventive measures. Also 55% of the workers said they have not received any education program in the company concerning preventive measures of accidents and injuries at work place. Lipscomb, *et al.*,¹⁵ reported in their study that 58% of workers agreed to having some safety incentive and educational programs at their work place.

In conclusion, a high percentage of the workers do not have adequate knowledge of the accident and injury prevention measures and the dangers associated with their work place. It is the responsibility of the company to ensure that its workers are aware of the prevention measures set up by the company and comply with them; receive health education programs and have a functional health service for cases of emergencies. Construction workers are advised to pay attention to safety measures set up at their work place and comply with them as this will help in reducing work place accidents and injuries. Seminars, workshops and health education programs to educate workers on accident and injury prevention measures can be organized periodically by governmental or non-governmental organizations for construction and other industrial workers.

ACKNOWLEDGEMENT

The authors would like to thank the staff and management of Haddock Quest Engineering and Construction Company Limited for giving their full support and cooperation toward this research.

REFERENCES

1. Huang, X. and Hinze, J. (2003). Analysis of contraction workers fall

- accident. *Journal of construction engineering and management*, 129 (3): 262-271.
2. Darragh, A.R., Stallones, L., Bigelow, P.L., and Keefe, T.J. (2004). Effectiveness of homesafe pilot programme in reducing injury rates among residential construction workers. *American journal of industrial medicine*, 45(2):210-7.
 3. Dement, J., Welch, H. and Myers, D. (2009) Mortality among sheet metal workers participating in a medical screening programme. *American journal of industrial medicine*, 52 (8): 603-13.
 4. Kaskutas, V., Dale, A.M., Nolan, J., Patterson, D., Lipscomb, H.J, and Evanoff, B.(2009). Fall hazard control observed on residential construction site. *American journal of industrial medicine*, 52(6):419-9.
 5. Abanobi, O.C. (2009). Core concept in epidemiology and public health practice. Owerri: Abanaheart publications.
 6. Abdelhamid, T.S. and Everett, J. G. (2000). Identifying root courses of construction accident. *Journal of construction engineering and management*, 126 (1) 52-60.
 7. Jain, T. (2008). *Industrial safety health and environment management system*. New Delhi: Khana publishers.
 8. Langford, D., Rowlinson, S., and Saw, E. (2000). Safety behavior and safety management: Its influence on the attitudes of workers in the U.k construction industry. *Engineering construction and architectural management*, 7(2): 133-140.
 9. Lipscomb, H.J., Nolan, J., Patterson, D., Fullen, M. Takacs, B.C. and Pompeii, L.A. (2011). Personnel selling nail guns know little about dangerous tools. *American Journal of Industrial Medicine*, 54(8): 571-8.
 10. Gupta, M. (2010). *Preventive and social medicine*. New Delhi: Japee brothers and medical publisher ltd.
 11. Dong, X.S, Choi, S.D., Borchardt, J.G., Wang, X. and Largay, J.A.(2013). Fatal falls from roof among U.S construction workers. *Journal of safety research*, 44:17-24.
 12. McCann, M.(2003). Death in construction related to personnel lifts. *Journal of Safety Research*, 34(5): 507-14.
 13. Dong, X. and Platner, J.W.(2004). Occupational fatalities of Hispanic construction workers. *American Journal of Industrial Medicine*, 45(1): 45-54.
 14. McCann, M., Hunting, K.L., Murawski, J., Chowdhury, R. and Welch, L.(2003). Causes of electrical death and injuries among construction workers. *American Journal of Industrial Medicine*, 43(4): 398-406.
 15. Lipscomb, H.J., Nolan, J., Patterson, J., Sticca, V. and Myers D.J. (2013). Safety, Incentives, and the verpativity of work-related injuries among Union Carpenters. *American Journal of Industrial Medicine*. 56(4): 389-99.

TABLES

Table 1: Characteristics of workers

Age group	Frequency	%
16-20	25	20.8
21-25	29	24.2
26-30	27	22.6
31-35	20	16.6
36-40	12	10.0
Above 40	78	5.8
Gender		
Male	75	62.6
Female	45	37.4
Marital status		
Single	38	31.7
Married	44	36.7
Divorced	10	8.3
Widow/widower	16	13.3
Separated	12	10
Educational status		
Primary	38	31.6
Secondary	41	34.2
Vocational	18	15
Tertiary	23	19.2
Years of experience		
0-5	61	50.8
6-10	41	34.2
Above 10	18	15

Table 2: Knowledge and attitude of workers

On accident and injury prevention measures	Frequency	%
Yes	67	55.8
No	53	44.2
On health education program received		
Yes	54	45
No	66	55
On financial implication of accident and injury		
Yes	79	65.8
No	41	34.2
On dangers associated with work place		
Yes	58	48.3
No	62	51.7
On compliance with use of PPE		
Yes	67	55.8
No	53	44.2
On management's commitment on providing PPE		
Yes	59	49.2
No	61	50.8
On availability of functional health service		
Yes	70	58.3
No	50	41.7

PPE- Personal protective equipment