

Occupational Hazards And Safety Practices: A Concern Among Small Scale Sawmilling Industries In Tamale Metropolis, Ghana

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Abstract— Occupational hazards and safety should be paramount for the well-being of any industrial worker. The main aim of this study was to ascertain the prevalent hazards/dangers encountered by workers in the Tamale Metropolis when working on wood/timber species. A survey involving the use of questionnaires, interviews and observations were used as tools for the investigation. The sample size for this study was made up of 60 respondents from the three constituencies within the Metropolis (Tamale North, Tamale South and Tamale Central). The data collected were analyzed using the Statistical Package for Social Scientists, version 16. Per our findings, work hazards are associated with a wide range of injuries and illnesses such as cut-type of injuries, fractures, sprains, catarrh, waist pains, eye problems and dizziness. Also, a significant number of workers in the study area did not use Personal Protective Equipment (PPE) when operating machines or performing jobs that required their use. Hence, the attitude and behavior of workers towards health and safety should be of major concern to employers or management of this industry. Health and safety education as well as training and provision of PPE's are therefore strongly recommended to prevent or minimize work-related accidents, injuries and illnesses.

Keywords— Accidents, Injuries, Personal protective equipment, Sawmills

1 INTRODUCTION

THOUGH industries have been established to meet various human needs since the dawn of civilization, some if not all pose detrimental effects on the health of man. Efforts on awareness and international concern of the problem of occupational diseases and accidents remain modest globally as 160 million people are affected by avoidable occupational diseases annually. It is estimated that more than 2 million workers die each year from work related accidents and diseases. Also, the International Labour Organisation (ILO) estimates that workers suffer 270 million accidents and at least 335, 000 fatal injuries annually [11]. The wood and timber related industries are however not exempted in terms of the degree of health hazards they pose to workers. Industry-related accidents and environmental hazards can cause death, disease, and injury. Work-related accidents induce enormous emotional and financial costs to families and to society [2]. Since the human and economic costs of occupational accidents and diseases remain high, it requires concerted efforts to handle them. According to Hurst and Kirby [9], the total cost per each accident in forestry-related industry varies from an average of hundreds of dollars in developing countries to thousands of dollars in industrialized countries. This consequently results in a disheartening loss of about 40% global Gross Domestic Product (GDP) annually, summing up to millions of US dollars due to occupational accidents and diseases [7]. As of 2008, the Ghanaian exporting timber industries were dominated by approximately 5 powerful multinational mills and 25 medium sized mills.

Aside the big and medium sized mills were 75 registered small scale companies. However some of these small companies are now inactive due to tightening raw material supply and liquidity problems [14]. The relevance of forestry related industries to communities of the nation amidst a rapidly increasing population will necessarily cause an increase in the domestic market for lumber for building as well as other constructional purposes. During 2003 and 2004, sawmills in Ghana supplied about 92,000 m³ of lumber to the domestic market, which is clearly not enough to meet the demand [14]. However, little or no attention is given to the various working conditions related to ill-health and environmental hazards when safety and efficiency are concerned. This study is therefore aimed at investigating the occupational hazards and safety practices among workers in small scale sawmilling industries. This is vital in that it will reveal and emphasize on factors and training needs of the workers which would in turn lead to high production, improved working condition and increased income.

2 MATERIALS AND METHODS

The research was carried out in the Tamale Metropolis of the Northern region of Ghana. Geographically, it lies between latitude 9° 16 and 9° 34 North and longitudes 0° 36 and 0° 57 West [8]. Purposive sampling was undertaken to identify small scale sawmilling industries within the three (3) constituencies of the metropolis (Tamale North, Tamale South and Tamale Central constituencies). Simple random sampling was then employed to select twenty (20) respondents/workers from each of the above named constituencies for the administering of semi-structured questionnaires. The questionnaires were administered to both workers and management of sawmilling industries. Relevant data on risk-related issues such as the type of hazards workers were exposed to (health complaints), use of personal protective clothing, accident reporting, awareness of risks involved with wood processing and the commitment of management in addressing safety and health issues. All analyses were conducted using the Statistical Package for Social Scientist, version 16

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3 RESULTS AND DISCUSSION

The research conducted showed that 65% of the respondents were within the age range of 25–44 years while 15% were less than 25 years (Table 1). The results clearly showed that most of the respondents were in their active age with a lesser proportion of younger ones. Also, about 20% of the respondents did not have formal education while 53.33% had about 10 years (thus basic or middle school) of formal education (Table 2). Though the respondents had low levels of formal education, they acquired their expertise through substantial years of work experience as revealed in this study.

Table 1. Age groupings of respondents

Variable	No. of respondents	Percentage
15-24	9	15.00
25-34	17	28.33
35-44	22	36.67
45+	12	20.00
Total	60	100.00

Table 2. Level of education of respondents

Variable	No. of respondents	Percentage
Basic/Middle School	32	53.33
Secondary School	10	16.67
Technical School	4	6.67
Tertiary	2	3.33
Illiterates	12	20.00
Total	60	100.00

3.1 Accidents and Injuries

Personal Protective Equipment (PPE) consists of garments and appliances that protect the wearer against certain injuries [10]. However, Hurst and Kirby [9] asserted that personal protective equipment should be used only as a last resort. Evidence emerging from our study showed that, a significant number of workers did not use personal protective equipment when operating or performing jobs that demanded their use. Helmet and goggles were generally not used to protect the head and eyes due to inadequate supply. From the study, the widely combined personal protective equipment included nose masks, hand gloves and goggles. Missing conspicuously were safety boots, ear plugs and supply of hard hats which are requisites for workers commonly exposed to overhead hazards (Fig. 1) [6]. Accidents and injuries are mostly caused by rotating devices, cutting or shearing blades, wood handling and vehicle accidents while crushed hands, severed fingers, amputations, and blindness are some typical woodworking accidents [4], [5], [15]. The commonly recorded accidents in the study area by the respondents included cut-type of injuries (36.67%), sprain (8.33%) and fracture (21.67%). Apart from these, respondents frequently had catarrh, dizziness, eye problems and waist pains which constituted about 33.33% of health related cases/accidents. Workers waist pains were mostly due to heavy lifting and pulling movements as well as awkward positions while performing tasks. Workers also indicated that exposure to dust and noise was due to lack of control at source and inadequate protective clothing (goggles, ear plugs, and nose and mouth masks). From the study,

insufficient supply and non-use of personal protective equipment were the number one cause of injuries (45%).

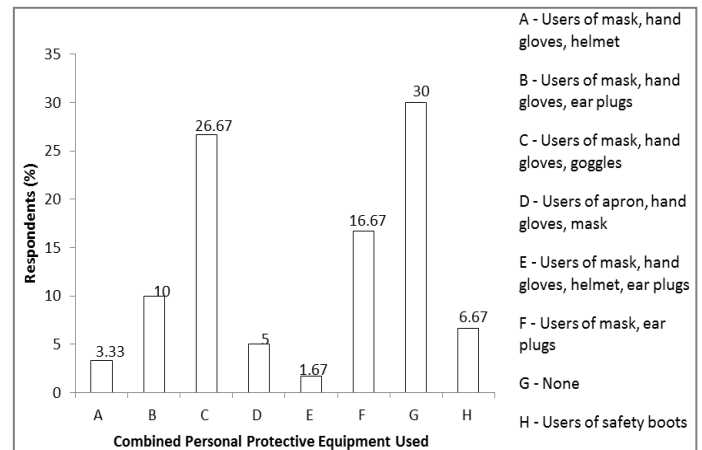


Fig. 1. Personal protective clothing used by respondents

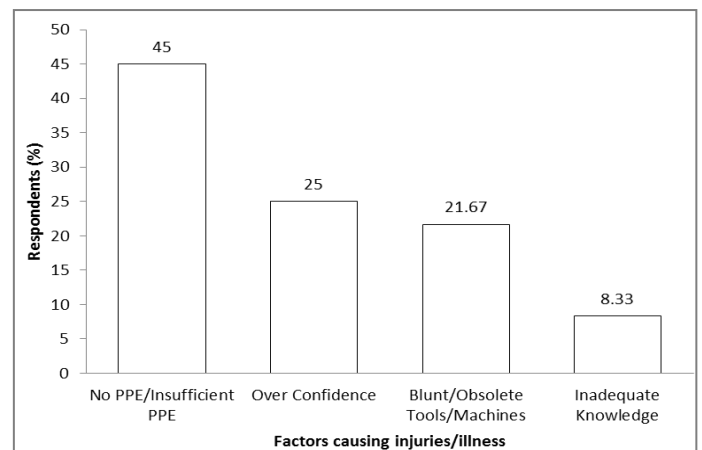


Fig. 2. Causes of workers injuries

This was followed by over confidence/negligence (25%), blunt/obsolete tools or machines (21.67%) and inadequate knowledge (8.33%) (Fig. 2). The low or non-use of available protective clothing was attributed to their uncomfortable nature by workers as revealed in findings elsewhere [13], [16]. Hence, protective clothing apart from accomplishing the appropriate safety functions should be as comfortable and attractive as possible. The study revealed that wood-workers worked for longer extended periods with minimum or no time for rest/break. This increases the risk of errors and decreases vigilance of workers thus, increasing the likelihood of occupational hazards [5].

3.2 Workers and Management

Lack of formal education adversely affected the efficiency of the workers as most of them could not read health and safety notices, posters and signals to avert dangers at the workplace. From the research, it was found that 95% of the respondents had no training on occupational health and safety whilst the remaining 5% received some form of training while in school. This exposed most of the workers to some untold levels of hazards [3]. However, none of the workers had attended any form of in-service training while on the job because management had never organized any in the previous years. A

study done by Jerie [12] in Mutare, Zimbabwe revealed similar findings. Such training would enable them to have in-depth knowledge on proper practices on safety while performing tasks. Hence, each person whether workman or member of management, requires a certain degree of familiarity with potential sources of danger and means of protection against them. Furthermore, management or industry owners do not provide adequate finance for the purchase and routine maintenance of protective clothing, efficient processing machines, equipment and tools that are linked to the health requirements of workers. Workers who are fortunate to be given such protective clothing are left with no instructions of how to use it. Unfortunately, some employers encourage workers to use personal protective equipment without ever considering the introduction of prevention and control measures that could minimize health related risks of the workers. This corroborates the report of ACTRAV [1] that some employers assume little responsibility for the protection of workers health and safety.

4 CONCLUSION

The study revealed that most accidents and injuries associated with small scale sawmilling industries are caused by non-use of PPE's. Secondly, workers in these industries generally acquire their skills and expertise on the job and years of experience put into it. However, they lack the professional safety approach to their work. Workers should therefore be trained on occupational health and safety to prevent or minimize accidents; their associated costs (eg. financial or psychological); and loss of life and time which could jeopardize production.

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