
Approaches to Improve the Occupational Health and Safety in the Construction Industry of Windhoek, Namibia

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Abstract: Globally, the construction industry is regarded as a very dangerous industry due to the labour-intensive nature of the work resulting into a high rate of occupational accidents, injuries, diseases and fatalities. In Namibia, the Occupational Health and Safety (OHS) status of workers in construction industries remains a challenge primarily due to the dearth of studies that investigate the health and safety of workers. The objectives of this study were to investigate the status of occupational health and safety in the construction industry in Windhoek, Namibia, with a view to recommend interventions that would improve occupational health and safety of workers in the targeted sector. A quantitative, descriptive study design was conducted among 549 participants from 13 construction sites that were operating at the time of conducting the study. Data were collected by means of an interviewer led questionnaire. SPSS version 23 was used to analyse data. The study identified a number of different approaches to be provided on construction industry for OHS improvement such as OHS programme implementation, training of workers on OHS aspects, provision of medical services to construction workers, adequate provision of welfare facilities, and Personal Protective Equipment (PPE) provision. The study has proven that there is a need to improve the OHS in the construction industry to prevent occupational accidents, injuries, fatalities and diseases. The practical guidelines were developed which could be useful if implemented in construction sites to improve the OHS in the construction industry.

Keywords: Construction, Industry, Improvement, Occupational Health, Occupational Safety

1. Introduction

Globally, the construction industry is regarded as a very dangerous industry due to the labour-intensive nature of the work resulting into a high rate of occupational accidents, injuries, diseases and fatalities [1]. In Namibia, the rate of occupational injuries and fatalities in the construction industry is higher when compared to other industries [2]. Furthermore [3] conducted the study by retrieving the documents, from the Ministry of Labour, Industrial relations and Employment creation, focused on Windhoek's construction industry's occupational accidents, injuries and diseases for the period April 2011 to March 2016. The study found out that there were 37 cases of occupational accidents which results in occupational injuries during the studied period. Among those, the study period witnessed 59.5% accidents that were major and required the worker to be absent from work for more than three days. These are

followed by 27% fatal accidents and 13.5% minor accidents which only needed first aid treatment and no absence from work for three days or more. The study revealed that there were no documented information regarding occupational diseases from the construction industry during the reviewed period of five years (April 2011 to March 2016) [3]. These figures are evidencing the higher rate of occupational accidents in the Windhoek construction industry, as well as lack of reporting of occupational diseases from the construction industry. Therefore, the study looked out on the approaches which could improve the OHS in the construction industry of Windhoek, Namibia. The improvement of OHS in the construction industry is in line with the Sustainable Development Goal (SDG) goal 3 and 8 which are alluding to "Good Health and Wellbeing" and Decent Work and Economic Growth" respectively.

2. Objective

The objective of this study was to investigate the status of occupational health and safety in the construction industry in Windhoek, Namibia, with a view to recommend approaches that would improve occupational health and safety of workers in the targeted sector.

3. Methodology

A quantitative, descriptive cross-sectional study was conducted. The study's setting included all 13 construction sites in Windhoek, Namibia which were in operation during data collection time. Convenient sampling was employed and 549 construction workers participated in the study. Data were collected using self-administered questionnaire with designed structured questionnaire. The main question in the questionnaire was "What could be done to improve the occupational health and safety in the construction industry of Windhoek, Namibia? Data was entered in the data set, cleared and coded and Statistical Package for Social Science (SPSS) version 23.0 (SPSS Inc. Chicago, Illinois, USA) version 23 was used to analyze the data. Ethical principles of confidentiality, privacy, anonymity, non-maleficence and beneficence were applied before, during and after the study. Ethical approval was obtained from the Research Ethics Committee of the Department of Health Studies at the University of South Africa. Furthermore, permission was requested and obtained from site managers for different construction sites in Windhoek, Namibia.

4. Results

4.1. Participant's Socio-Demographic Characteristics

The analysis showed that, 485 (88.3%) of the participants in this study were males compared to 64 (11.7%) who were females. Regarding participants' age group distribution the analysis showed that 235 (42.8%) of the participants were aged between 18- 29 years followed by those between 30-39 years 229 (41.7%). The mean overall age was 31.48 years. Furthermore, 5.6, 364 (66.2%) of the participants were single, followed by those who were married. 137 (25.0%). Regarding

the participants educational background, the analysis showed that 275 (50.1%) of the participants had secondary education, followed by 210 (38.3%) participants with primary education.

The analysis shows that occupations of the participants who were included in this study were as follows: 124 (22.6%) bricklayers, 123 (22.4%) laborers, 70 (12.8%) carpenters, 66 (12.0%) painters, 62 (11.3%) plumbers, 53 (9.7%) other category of construction workers, 29 (5.3%) electricians, 15 (2.7%) drivers, and 7 (1.2%) were engineers. The analysis further shows that 400 (72.9%) of the participants were permanent workers, 83 (15.1%) were employed on fixed contract, while 66 (12.0%) were casual workers.

4.2. Approaches to Improve OHS in the Construction Industry of Windhoek, Namibia

The following common elements derived from participants' responses were categorized into themes and sub-themes as described below for construction industry's OHS improvement such as OHS programme implementation, training of worker on OHS aspects, provision of medical services to construction workers, adequate provision of welfare facilities, and Personal Protective Equipment (PPE) provision as described here after.

4.2.1. Occupational Health and Safety Program Implementation

The analysis showed that 163 (29.6%) of the participants indicated a need for construction companies to implement OHS programs in the construction sites. Among those who shared this sentiment, 19 (3.4%) participants indicated the need for the establishment of OHS policies, 10 (2.0%) participants indicated the importance of establishing anti-harassment policies, and 31 (5.6%) indicated the importance of recruiting occupational health and safety officers in all construction sites. Furthermore, the analysis shows that, 30 (5.4%) participants indicated the importance of having occupational health and safety committees in construction sites to guide them on OHS aspects and 41 (7.4%) indicated the need to nominate OHS representatives at workplaces. While, 32 (5.8%) participants stated that labor inspectors should inspect construction sites for OHS compliance. The findings are displayed in Table 1.

Table 1. Occupational Health and Safety programme implementation need.

Main issue	Frequencies(n)	%	Sub-themes	Frequencies(n)	Percentage%
OHS programme implementation	163	(29.6)	OHS policy development	19	(3.4)
			Anti-harassment policy development	10	(2)
			Recruitment of OHS officers	31	(5.6)
			Appointment of OHS representatives	41	(7.4)
			Appointment of OHS committees	30	(5.4)
			Labour inspector visit	32	(5.8)

4.2.2. Occupational Health and Safety Training of Workers

As shown in table 2, the analysis shows that 97 (17.6%) of the participants indicated the importance of conducting OHS training on construction sites. Among those participants the need for accident prevention training was recommended by 44

(8.0%), training of workers on what to do in case of accident was indicated by 18 (3.3%) the need for electric safety training due to the increase of electric accidents in construction industry was stated by 12 (2.2%) while, the need for training of workers on emergency care was stated by 23 (4.1%).

Table 2. Occupational Health and Safety training need of construction workers.

Main issue	Frequencies (n)	%	Sub-themes	Frequencies (n)	Percentage %
OHS training of workers	97	(17.6)	Training of workers on accident prevention	44	(8)
			Training of workers on what to do in case of an accident	18	(3.3)
			Training of workers on emergency care	23	(4.1)
			Training of workers on electric safety	12	(2.2)

4.2.3. Provision of Medical Services to Construction Workers

The provision of medical services to construction workers was indicated by 92 (16.8%) of the participants. Among the participants who shared this theme 25 (4.5%) of the participants indicated the need for the provision of medical aid services, 21 (3.8%) participants stated the need to have medical check-ups at work, while, 11 (2.0%) of the participants indicated the need to be provided with antiretroviral treatment on construction sites. The analysis further shows that 24 (4.3%) of the participants would like to have first aid service provision at work whereas 11 (2.2%) indicated the need for an ambulances on sites to take workers to the hospital in case of injuries or accident at work.

4.2.4. Adequate Provision of Welfare Facilities

The analysis indicated that 126 (23.0%) of the participants need adequate provision of welfare facilities such as separate adequate toilets for males and females which was started by 27 (4.9%), the need for designated smoking area as indicated by 20 (3.6%), while, 10 (1.8) indicated that they would like the long working hours to be prevented as they mostly work Mondays to Saturdays. Furthermore, the analysis indicated that 47 (8.5%) of the participants need for the provision of transport from and to work and 22 (4.0%) stated the importance of an increment in their wages/salary.

4.2.5. Personal Protective Equipment (PPE) Provision

Finally, the analysis revealed that 71 (13.0%) of the participants indicated that PPE provision and replacement would improve the OHS in the construction industry. This sentiment was shared by 36 (6.6%) of the participant by alluding the need for the provision of PPE to the construction workers while 35 (6.4%) of the participants indicated the need for the replacement of PPE.

5. Discussion

The findings from this current study showed that male participants were significantly more than female participants. This finding is consistent with the demographic data about the construction industries such as that found in Hong Kong [4]. Construction industry is male dominated which may influence the OHS needs of women to be neglected such as provision of PPE designed for women for effective protection. Furthermore, the findings revealed that more than two-fifths of the participants were aged between 18 and 39 years which are young workers. Young workers need OHS guidance as they tend to ignore safety measures and they are not experienced.

The findings showed that two-sevenths of the participants indicated the need for construction companies to implement OHS management system at the construction sites. The view is in agreement with the requirements of section 3 of Regulations relating to health and safety of employees at work (No 156 of 1997) [5]. Section 3 states that it is the employer's responsibility to establish an OHS program and OHS policy development artwork. This is supported by several authors [6-8] who have indicated that the overall solution for OHS challenges is implementing OHS program in the organization. The OHS program implementation is for utmost importance at workplaces which promote OHS. The findings showed that one-sixth of the participants underscored the importance of conducting OHS training. Similarly, [9] evaluation of the mandatory construction industry training program in Australia noted that 96% of the participants mentioned the importance of OHS training in accident prevention. In addition, Taylor's [10] assessment of the impact of the mandatory OSHA 10hour training in the USA found out that training benefited the construction industry with regards to accident and injury preventions.

This current study showed that one-sixth of the participants indicated the need for the provision of medical services to construction workers. The findings are in line with the provision of section 219 of the Regulations relating to health and safety of employees at work (No. 156 of 1997) and International Labour Organization [11] requirement that the employer should provide medical surveillance to their employees. The findings of this current study indicated that two-ninths of the participants stated the need for adequate provision of welfare facilities. It also emerged, from the current study findings that, more than two-ninths of the participants indicated that the provision of PPE would improve the OHS in the construction industry. This is also noted in Fan [12] study on the Hong Kong construction industry that concluded that PPE should be used to reduce the occupational hazard exposure levels.

The OHS management system implementation is for utmost importance at workplaces which promote OHS. Consequently, by implementing OHS management system at work places OHS would be improved, as all aspects stated by the participants such as OHS program implementation, provision of OHS training, medical services provision, welfare facilities provision and PPE provision are components of OHS management system.

6. Conclusion

The study has proven that there is a need to improve the OHS in the construction industry to prevent occupational

accidents, injuries, fatalities and diseases. The researcher developed the practical guidelines which could be useful if implemented in construction sites to improve the OHS in the construction industry.

7. Recommendations

1. Employers should ensure that the organization is performing its work based on the statutory legislative requirements of the Labour Act (Act No 11 of 2007), Regulations relating to occupational health and safety of employees at work (No 156 of 1997) and the National occupational health policy of Namibia (2006) especially in development and implementation of OHS program at all workplaces.
2. The Ministry of Labour, Industrial relations and Employment creation should employ adequate competent OHS inspectors, to inspect construction sites and enforce OHS legislations.
3. Since the study was only conducted in Windhoek construction industry, further researches should be conducted to assess the OHS situation in the construction sites in other regions of the country.
4. This study was only conducted on construction workers, so other studies should be conducted to get the views of construction site managers or supervisors.

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