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INVESTIGATING TRAINNING LEVELS ON THE USE OF PROTECTIVE EQUIPMENT AMONG THE CONSTRUCTION WORKERS IN MOMBASA COUNTY, KENYA

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ABSTRACT

Purpose: The purpose of this study was to investigate the training levels on the personal protective equipment among the group under study in Mombasa County, Kenya. Methods: This study interviewed one hundred and four respondents on the construction sites and investigated them on training levels on the use of protective equipment among the construction workers in Mombasa County, Kenya to ascertain adherence in the prevention of occupational hazards related with the construction works. This was cross sectional study design where about 13 sites were purposively and randomly selected within Mombasa County. The target was construction workers whereby, 104 respondents were interviewed on training needs to establish whether there was a relationship between injuries and safety. Questionnaires, Observation checklist and schedules were used to collect the respondent's views. Data was analyzed with SPSS version 20.0 and Chi Square was used to establish statistical significance between independent and dependent variables. **Results**: The majority 79(76%) of respondent had never undertaken any safety training especially on the use of PPE on construction sites while a few 25(24%) had undertaken safety training on Personal Protective Equipment. This study found out that there were more male (86%) than female respondents with (14%). Conclusion and recommendation: This study therefore, concludes that, there was no significant association (χ^2 =5.0, df=12, p=0.72) between training of workers on safety and any particular construction sites. However, training deficit was found to be statistically significant with construction work related injuries. Therefore, this study recommends constant and intensive improved briefs on safety trainings from contractors to all construction workers and sites as these will reduces workplace injuries and hazards hence improved productivity.

KEYWORDS: Personal Protective equipment, Injuries, risks, hazards.

INTRODUCTION

Training is one of the aspects whereby individuals acquire knowledge and skills prior to working as employees in a work place to enhance performance on specific tasks. Therefore, this study investigated the construction workers on the personal protective equipment and their relevant trainings to establish safety precautions in work place. In Mombasa where the study was carried out, most of the firms had been operational for at least 3 years with others having been in operation for 15 years. The more the years of this firms were in operation, the more its worker were acquainted with safety in the work place hence reduced risks and hazards on safety and health. Therefore, those sites which had not trained their workers on safety and had not been in operation for more than three years experienced higher levels risks and hazards, hence training is paramount in construction site. Management of construction sites with many years of operation were aware of the hazards and the measures they had put in place to curb the workplace injuries and risks as per (OSHA, 2007). Therefore, this study found out that training of construction workers led to reduced risks and hazards in Mombasa County compared with those that had not conducted any form of trainings.

METHODS

This was cross sectional study design where about 13 sites were purposively and randomly selected within Mombasa County. The target was construction workers whereby, 104 respondents were interviewed on safety issues about PPE use to establish whether there was a relationship between injuries and safety. The questionnaires, Observation checklist and schedules were used to collect the respondent's views.

STUDY RESULTS

The results about trainings on various levels, this study found out 79(76%) had not trained on PPE use while 25(24%) had trained on PPE use as can be seen from the table 1 below on participants trained on safety issues and PPE use.

| Sites | PPE use against training | | | | p-value |
|-------|-----------------------------------|-------------------------------|---------------|---------|---------|
| | Not trained on PPE use (n) (%) | Trained on PPE use (n) (%) | Total (n) (%) | | |
| 001 | 5 (62.5) | 3 (37.5) | 8 (100.0) | 5.0, 12 | 0.72 |
| 002 | 6 (75.0) | 2 (25.0) | 8 (100.0) | | |
| 003 | 7 (87.5) | 1 (12.5) | 8 (100.0) | | |
| 004 | 6 (75.0) | 2 (25.0) | 8 (100.0) | | |
| 005 | 4 (50.0) | 4 (50.0) | 8 (100.0) | | |
| 006 | 6 (75.0) | 2 (25.0) | 8 (100.0) | | |
| 007 | 7 (87.5) | 1 (12.5) | 8 (100.0) | | |
| 008 | 6 (75.0) | 2 (25.0) | 8 (100.0) | | |
| 009 | 7 (87.5) | 1 (12.5) | 8 (100.0) | | |
| 010 | 5 (62.5) | 3 (37.5) | 8 (100.0) | | |
| 011 | 6 (75.0) | 2 (25.0) | 8 (100.0) | | |
| 012 | 8 (100.0) | 0 (0.0) | 8 (100.0) | | |
| 013 | 6 (75.0) | 2 (25.0) | 8 (100.0) | | |
| Total | 79 (76.0) | 25 (24.0) | 104 (100.0) | | |

Table 1: Participants trained on safety issues and PPE use.

Key: *n* - *Frequency*, (%) – *percentage*, χ^2 - *Pearson chi square test*, *df* – *degree of freedom*

Importance of training

On evaluating the importance of training, the study found out that there were only 24% Workers who underwent safety training on their respective construction site. Also only (4%) of the employees had underwent safety training on their respective construction sites, however, they stated that training was of no help to them, while as the rest (96% agreed to the contrary that the training was paramount to them as can be seen from 2 below.

Therefore, the study found out that there was significant association (χ^2 =9.2, df=1, p=0.01) between training on safety issues and the number of workers who confirmed that safety training on PPE use, cleaning and maintenance was important to them.

| rubic 21 mipor curve of burees in the construction sices | Table 1 | 2: Im | portance of | f safety | training | to workers | in th | e construction sites | 3. |
|--|---------|-------|-------------|----------|----------|------------|-------|----------------------|----|
|--|---------|-------|-------------|----------|----------|------------|-------|----------------------|----|

| Response | Training on | χ^2 | df | p-value | |
|----------------|-------------------|-----------------|-----|---------|------|
| | Frequency (n) (%) | Percent (n) (%) | | | |
| Not important | 1 | 1.0 | 9.2 | 1 | 0.01 |
| Important | 24 | 23.1 | | | |
| Total | 25 | 24.0 | | | |
| Missing System | 79 | 76.0 | | | |
| Total | 104 | 100.0 | | | |

Key: n - Frequency, (%) – percentage, χ^2 - Pearson chi square test, df – degree of freedom

Safety briefs to construction workers

The results of this study showed that, 86(82.7%) participants disagreed that they were given briefs before commencing any work on their daily basis while 18(17.3%) affirm that they were given briefs before commencing any work on daily basis (table 3).

The result of this study confirms that most of the construction sites studied does not give safety briefs to their workers. There was no significant association (p=0.49) between giving safety briefs to construction workers and any particular construction site investigated.

| Sites | Safety briefs against PPE use | | | χ^2 | df | p-value |
|-------|-------------------------------|-----------------|----------------------|----------|----|---------|
| | No briefs (n) (%) | Briefed (n) (%) | Total (n) (%) | | | |
| 001 | 5 (62.5) | 3 (37.5) | 8 (100.0) | 1.0 | 12 | 0.49 |
| 002 | 8 (100.0) | 0 (0.0) | 8 (100.0) | | | |
| 003 | 8 (100.0) | 0 (0.0) | 8 (100.0) | | | |
| 004 | 7 (87.5) | 1 (12.5) | 8 (100.0) | | | |
| 005 | 7 (87.5) | 1 (12.5) | 8 (100.0) | | | |
| 006 | 6 (75.0) | 2 (25.0) | 8 (100.0) | | | |
| 007 | 6 (75.0) | 2 (25.0) | 8 (100.0) | | | |
| 008 | 8 (100.0) | 0 (0.0) | 8 (100.0) | | | |
| 009 | 7 (87.5) | 1 (12.5) | 8 (100.0) | | | |
| 010 | 5 (62.5) | 3 (37.5) | 8 (100.0) | | | |
| 011 | 6 (75.0) | 2 (25.0) | 8 (100.0) | | | |
| 012 | 7 (87.5) | 1 (12.5) | 8 (100.0) | | | |
| 013 | 6 (75.0) | 2 (25.0) | 8 (100.0) | | | |
| Total | 86 (82.7) | 18 (17.3) | 104 (100.0) | | | |

Table 3: Safety briefs before commencement of work in the construction sites.

Key: *n* - *Frequency*, (%) – *percentage*, χ^2 – *Pearson chi square test*, *d.f* – *degree of freedom*

Construction firm's years of operation

Regarding the number of years, the construction firms had worked, 4(30.8%) had been operational for a period

of 1, 2 and 3 years, respectively while the remaining [1(7.6%)] had worked for a period of 15 years in Mombasa County (Figure 1).



Figure 1: Number of year's construction firms has been operational.

In this study, the construction firms had been in operation for an average period of 3 years. The median firm had been in operation for 2 years. Most of the firms had been operational for at least 3 years. Some of the firms had been operational for at most 1 year while others had been operational for up to 15 years as can be seen from (table 4) below.

| Years in operation (| Statistics | | |
|----------------------|------------|-----|--|
| N | Valid | 103 | |
| IN | Missing | 1 | |
| Mean | 3.01 | | |
| Median | 2.00 | | |
| Mode | 3 | | |
| Std. Deviation | 3.588 | | |
| Variance | 12.875 | | |

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| Skewness | 2.923 |
|------------------------|-------|
| Std. Error of Skewness | .238 |
| Range | 15 |
| Minimum | 1 |
| Maximum | 15 |
| Sum | 310 |

DISCUSSION

The findings of this study, confirms that most of the construction sites studied does not give safety briefs to their workers. Therefore, was no significant association (p=0.49) between giving safety briefs to construction workers and any particular construction site investigated. This is because the employer assumed that the construction workers were conversant with their work since they had been doing them over again and again.

According to a study done by Garcia *et al.*, (2004), on workers' perceptions and experience in relation to occupational health and safety, it concurred with this study, that trainings are scarcely considered in programs for the prevention of work related injuries and diseases. However, healthy environments and healthy behaviors are key determinants of occupational health.

Also, Cohen *et al.*, (1998 and Lingard H, 2002) in their studies found out that interventions over workers' behavior intended to risk prevention are usually based on specific training programs, which are generally devoted to increasing workers' knowledge on hazards and promoting safer work behaviors.

The more the years of operation by construction site the more experience its management has in terms of occupational safety and health. Head injuries were found to be more common in construction sites as a result of falling objects that led to traumatic brain injuries and even death and this study concurs with one done by Cong, (2008) and Makhonge P, (2005) on good practices in occupational health and safety who also observed high incidences of injuries as a result of low utilization of PPEs.

This study therefore, contrasts with Lindell, (1994) and Macfarlane, E., (2008) on training and other predictors on person protective equipment in organizational factors related to safety and health at workplace, who found out that management policies and practices regarding occupational risk prevention, affect implementation of workers' safety training.

CONCLUSION AND RECOMMENDATION

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The study found out that most participants 79(76%) had never undertaken any safety training especially on the use of PPE on construction sites. Hence, this study concludes that, there was no significant association (χ^2 =5.0, df=12, p=0.72) between training of workers on safety and any particular construction sites. However, training deficit was found to be statistically significant with construction work related injuries.

Therefore, this study recommends constant and intensive replica of briefs on safety trainings from contractors to all construction workers and sites as these will reduces workplace injuries and hazards hence improved quality performance.

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