

# Alcohol Abuse and Illicit Drug Use at Construction Sites: Perception of Workers at Construction Sites

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**Abstract** This study aims at establishing the perception of workers at the construction sites regarding illicit drug use and alcohol abuse. Specifically the study attempts to investigate the key causes of substance abuse, awareness among workers on the effects of alcohol and illicit drug in workplaces and put forward possible measures that may be employed to control the situation. The study is based in construction sites located in two regions namely Dar es Salaam and Iringa regions on being a city and another rural region. The data were collected through interview and non-participatory observations. Construction sites were selected using both judgemental and convenience sampling methods. The sites were selected with the criteria of the number of workers on site with a benchmark of at least 70 construction workers both being skilled (tradesman) and unskilled workers (casual labourers). Life style, coping technique and taboo were found as major reasons of illicit drug use and alcohol abuse at the construction sites. Both tradesmen and casual workers interviewed were observed to have past history in illicit drug use and alcohol abuse. The taboo towards hardship and nature the works was found to contribute to the levels of alcohol abuse and illicit drug use for example the extent of alcohol abuse among concreters and block layers (masonry casual workers) was significantly higher compared to other trades which are considered less physical demanding. Training and provision of awareness education on areas of illicit drug use and alcohol abuse was observed to be given the least priority compared to other area such as HIV/Aids and fire safety. This study has shed light on the need for clients and site supervisors to put forward mechanism for ensuring alcohol use and drug abuse is controlled at construction sites.

**Keywords** Alcohol Abuse, Illicit Drugs Use, Construction Site Workers, Construction Sites, Perception

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## 1. Introduction

Illicit drugs and alcohol has been used as a medium for change in mood and perception by human being since early ages. Some customs have indulged in drug and alcohol abuse as a way of life, further legalizing it in workplaces [2]. For example in some of African tribes the use of illicit drugs such as khat<sup>1</sup> and cannabis leaves to fuel tolerance in hard labour has been observed [8].

Some other example includes Peruvian workers who chew coca leaves and Jamaicans who smoke cannabis in workplaces as a mode of motivation and energy stimulant [2].

The survey on illicit drug use among youth in Tanzania conducted by World Health Organisation in [17], found that, the use of natural existing illicit drugs (cannabis and khat) is

comparable at the same levels as that of synthetic illicit drugs (cocaine and heroin). Also the report found that most youth abuse cheaply available alcohol both locally and industrial produced.

Common illicit drugs used in Tanzania include cannabis, khat, heroin and cocaine. Also there is less significant use of aerosol or gaseous fumes among illicit drug users in Tanzania as they are not widely available [17].

Construction workplace is among the most susceptible and vulnerable workplace to illicit drug use and alcohol abuse [5] [6] [11] [9].

According to [9], alcohol abuse and illicit drug use at the construction sites in Tanzania is not an emerging issue and it has existed since the inception of the construction industry. As supported by [17] the traditional and cultural characteristics allow individuals to utilize alcohol as a source of energy or rather confidence and motivational tools during farming and it has spread into construction site works.

Whether onsite or offsite the alcohol abuse and illicit drug use posse a major concern to both site workers and the works and as far as the traditions and customs are concerned there is a great deal for scrutiny the perception of workers towards alcohol abuse and illicit drug use in

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<sup>1</sup> A flowering plant containing chemicals that induce excitement, loss of appetite and excitement when chewed.

construction site.

### 1.1. Reasons for Alcohol Abuse and Illicit Drug Use among Construction Site Workers

Motives behind alcohol abuse and illicit drug use in construction sites have been found to be both directly and indirectly related to the site works or the workers themselves. Direct related reasons are also termed as coping strategy include the need to increase concentration, to modify the self confidence, to induce strength, to reduce anxiety and tension. Other reasons not related to works include traditional and customs, personal lifestyle, and peer pressure [10] [13] [9].

### 1.2. Impacts of Illicit Drug Use and Alcohol Abuse in Construction Sites

Different studies have found that workplace safety and performance have been compromised and widely reduced respectively due to illicit drug use and alcohol abuse by employees in construction sites [14] [15] [16] [18] [1] [19].

In addition to the above, site workers mental and emotional impairment have been observed at the construction sites due to the use of illicit drugs and abuse of alcohol. High absenteeism, loss of productivity has been reported as among of the effects arising from workers alcohol abuse both on site and off site [20].

Furthermore crime and violent behaviours has been reported among workers with alcohol abuse and illicit drug use historical background. Sites with high levels of crime and violence have been reported to contain large number of site workers with alcohol abuse behaviours [14] [15] [9].

Poor work quality, reduced attention, needless risks taking behaviours and ignorance towards safety are among of behaviours observed from site workers. Significant losses of hours at sites have been recognised in sites where workers have been involved in alcohol abuse and illicit drug use behaviours [14] [15] [16].

High degrees of site workers turnover, reworks and personnel injuries have been reported as among of the results of site workers alcohol abuse and illicit drug use [3]. Workers with alcohol abuse behaviours are more likely to cause accidents at the construction sites [18] [1] [13] [7] [19]. Workers who abuse alcohol are three times more likely to be involved in occupational related injuries [12] [8] [19].

Furthermore, according to [18], 35% of emergency department patients from occupational related accidents were having a historical background of either alcohol abuse or illicit drug use. The study further synthesised that there was a significant relationship between the levels of alcohol in patients with occupational related injuries and the fatality of the accident.

Cost of workers replacement and reworks have significantly been elevated with the prevalence of workers alcohol abuse and illicit drug use at the construction sites.

Therefore, illicit drug use and alcohol abuse in construction sites combine broad spectrum of complications

from injuries and accidents at the construction sites as from those with high fatality including death to minor injuries [13].

### 1.3. Extent of Alcohol Abuse and Illicit Drug Use in Construction Sites

According to [11] based in United States the construction sector form a significant part (15.1%) when comparing workers in various sector with illicit drug use behaviors. Study by [13] based in South Africa further stipulated an increase to 17.9% of construction workers in alcohol abuse and illicit drug use as compared to other sector. The Table 1.1 further elaborates the situation;

**Table 1.1.** Illicit Drug Use among Workers in Occupation Categories [11]

Sector	Prevalence of Illicit Drug Use
Food Service Workers	17.4%
Construction Workers	15.1%
Education, Training and Library Occupation	4.1%
Community and Social Service Occupations	3.4%
Protective Service Occupations	4.0%
Other Sectors	@ less than 2%

In Tanzania however such figures are yet to be established. Although with respect to the growth of the construction industry considering the increase in number of construction projects it has led to significantly increase in employment opportunities for both skilled and unskilled workers. Most of the unskilled workers are shifting from other sectors such as agricultural sector due to lack of job opportunities.

Furthermore, [9] synthesized illicit drug use and alcohol abuse behaviors are common in the Tanzanian construction industry. Since the study was based in questionnaire survey methodology it was significantly found that the extent of the problem requires an in-depth exploration, as such the findings was based on the construction practitioners and not construction workers at the site who are considered more susceptible to drug use and alcohol abuse at the workplace.

## 2. Methodology

### 2.1. Population and Sampling Design (Multiple Cases Sampling)

The aim of this study was to investigate the perception of site workers regarding to drug use and alcohol abuse at the construction sites. The population for this study includes skilled and unskilled site workers from various construction sites. 15 number of construction sites were purposively selected from two regions (cities) in Tanzania namely Dar es Salaam (10 sites) and Iringa (5 sites). The size of the project and number of skilled and unskilled workers in the site was used as selection criteria.

The study involved 5 road works site and 10 building

works site. All the construction sites involved in this study had at least 50 skilled and unskilled construction workers.

10 number of construction site workers were selected in each construction site as follows; 5 number of construction site workers were judgmentally selected from each construction site looking on workers with history of alcohol abuse or drug use and 5 number of other construction site workers were conveniently selected to make a cross comparison of the findings. Thus the total population of study was 150 construction site workers.

## 2.2. Materials and Methods

### 2.2.1. Structured In-depth Interviews

Structured interviews were conducted by the research through face to face interviews between the researcher and the construction site workers at each construction site. All the interviewees were informed and agreed to contribute to the study. Digital voice recorder was used in recording all the interviews with aid of note taking in documenting interview data.

### 2.2.2. Non-participatory Observations

The researcher neither participated in construction works nor attempted to abuse alcohol or use drugs during the process of interviews. Non participatory observation were conducted to help in describing various event such as time when workers abuse alcohol, observable behaviors of workers on alcohol abuse both onsite and offsite and observing debris of alcohol packing's or left over pieces of Cannabis.

## 2.3. Thematic Data Analysis

During the data analysis different themes were created to discuss and present various issues found in the data collected. The major themes were created to represent smaller themes that were considered smaller during the interviews and observations.

## 3. Results and Discussion

### 3.1. Demographic Characteristics of the Sample

80% of the respondents were male construction workers and 90% of the sample was aged between 20 and 40 years. All the construction site workers interviewed had completed the primary education and had more than 2 years of experience in construction site works. 20% of the site workers interviewed has received a formal technical education on the construction field. 98% of the site workers in the study were working to supporting their families i.e. either married or living with family members requiring their support in daily needs.

### 3.2. Prevalence of Alcohol and Drugs in the Construction Sites

The type and kind of alcohol and drugs found during the field works are as stipulated in the table 3.1.

Contrary to other studies [18] [1] [13], during the field works and interviews none of the respondent had history of either using or injecting cocaine or heroin. Thus basing in the sites visited there is low prevalence of heroin and cocaine in construction sites.

Thus most of the construction site workers take advantage of the cheaply and easily available sources of either alcohol or drugs.

**Table 3.1.** Types and Kind of Alcohol found in Construction Sites

Region	Alcohol	Drugs
Dar es Salaam	<ul style="list-style-type: none"> <li>• Legal local brews</li> <li>• Cheaply packed liquors (viroba<sup>2</sup>)</li> <li>• Illegal local brews (gongo<sup>3</sup>)</li> </ul>	<ul style="list-style-type: none"> <li>• Homemade tobacco cigarettes</li> <li>• Cannabis</li> <li>• Khat</li> </ul>
Iringa	<ul style="list-style-type: none"> <li>• Bamboo juice</li> <li>• Cheaply packed liquors (viroba)</li> <li>• Illegal local brews (gongo)</li> </ul>	<ul style="list-style-type: none"> <li>• Homemade tobacco cigarettes</li> <li>• Cannabis</li> <li>• Khat</li> </ul>

The need for focus at the construction works and inability to tolerate the side effects of cocaine and heroin contributed a great deal in preventing workers from using cocaine and heroin use at the construction sites. Same finding have been reported [6], [9], [10]. During the interviews workers described their fear towards cocaine and heroin;

*"I have seen a man literally sleeping for 2 hour or more just after injecting heroin. This has made me aware that injecting heroin could prevent me from doing this work hence I will not receive payment. I prefer something tolerable like our local brews and these cheaply legal liquors"* (Response from a 30 year old male unskilled construction worker with 6 years of working experience in construction works).

*"We always see the heroin users sleeping and stealing in the streets. They cannot lift heavy things on stand for a long time. So why should I use heroin? When I take a litre of ulanzi (bamboo juice) it gives energy and confidence and I can even skip lunch and save money as a litre is only 500 shillings and lunch is 2000 shillings"* (Response from a 37 year old male skilled steel fixer with 10 years of working experience in construction works).

*"Our supervisors allow us to take ulanzi (bamboo juice) during working hours as long as we do not get drunk. But they I don't think they allow us to inject ourselves at the site, and by the way I have not been able to have access to the heroin"* (Response from a 25 year old male unskilled masonry worker with 4 years of working experience in construction works).

Alcohol abuse practices in the other hand were found to be present in all construction sites (as seen from the interviews

<sup>2</sup> 100ml plastic packed liquor with 35% alcohol content; currently banned by Authorities but locally available.

<sup>3</sup> Local made distilled liquor banned by the Authorities.

extracts). The influential factors on alcohol abuse behaviour among construction workers include the ability of workers to tolerate the side effects of alcohol without compromising their works, easy access to local brews and fear of the impacts of other drugs such as cocaine and heroin.

Cannabis and Khat are widely used at the construction sites. Among the 15 constructions selected for the study only 5 sites were not found with prevalence of the Cannabis and Khat. The sites were located in the Dar es Salaam city centre and were nearby police stations. During the interviews workers presented their views on the use of Cannabis and Khat;

*“It is risk to bring marijuana (cannabis) at the site because the police know the smell of the smoke, and they always visit the surroundings time to time”* (Response from one site worker at the sites where cannabis was not found being used among workers during site works).

In the sites where workers were using cannabis and khat during site works the following views were extracted;

*“Marijuana helps me to forget how heavy the bucket of concrete is and how long I need to carry it. I can eat large amounts of food when I smoke marijuana to gain energy and work for long hours without getting tired”* (Response from a 30 year old male unskilled masonry with 5 years of working experience in construction works).

Therefore from the above responses the findings have revealed that there is less use of synthetic illicit drugs such as heroin compared to those which are locally found such as cannabis. Fear among construction site workers on the effects of heroin has contributed much in less prevalence of the synthetic illicit drug use in construction sites. There is wide awareness on the effects of heroin among construction site workers than cannabis or khat.

### 3.3. Alcohol Abuse and Illicit Drug Use Behaviours among Construction Workers

#### 3.3.1. Alcohol Abuse among Skilled and Unskilled Construction Workers

Interviews with construction supervisors enlightened that there is no disparity in terms of alcohol abuse and drug use among construction workers with different set of knowledge or skills. Below are the responses from supervisors in various sites;

*“The only difference is in their extent of use but they all smoke cannabis and drink local brews as they get the chance. The skilled workers have less movement hence less chance to get to points where they hide the alcohol and cannabis”* (Response from site supervisor with 10 years of experience at a site located in the city).

Similar responses have been observed from other sites site supervisors. Hence there is no significant difference between the level of skills or knowledge and the alcohol abuse behaviour. The only hindering factor to skilled workers on abusing alcohol is the lack of frequent movements in the site compounds.

#### 3.3.2. Demographic on Work Trades and Alcohol Abuse and Illicit Drug Use

During the interviews it was found that there is a relationship between hardness or levels of risk of the works and behaviours related to alcohol and drug abuse. Table 3.2 stipulates the relationship between work trades and the level of alcohol abuse and illicit. Number of alcohol abusing workers in heavy duty and high risk areas such as concreting section and masonry section was higher compared to that in the painting or carpentry section. Below are findings from some of the interviews;

*“These works requires me to have a different mindset so I have to get tipsy a little bit to forget how heavy and risky the work is. By the way I have never made any damages to the work or harm anyone I just drink this to increase my energy and focus”* (Response from one unskilled site worker from masonry section who takes alcohol during working hours. The same finding was observed in other sites).

*“To break and crush all these stone and concrete walls by hand I need some reinforcement in my body and my brain and I am used to it. Even if you try it yourself you will find out it is impossible without kiroba<sup>4</sup>”* (Response from one unskilled site worker from masonry section who takes alcohol during working hours. The same finding was observed in other sites located from both regions).

**Table 3.2.** Alcohol Abuse and Illicit Drug Use (the check from all 15 visited construction sites)

Region	Work Trade	Alcohol Abuse Behaviour	Cannabis/Khat Use
Dar es Salaam (City)	Concreting	✓	✓
	Block and brick layers	✓	✓
	Steel fixers	✓	✓
	Painters	✗	✗
	Plumbing	✗	✗
	Electrical	✗	✗
Iringa (Rural Region)	Concreting	✓	✓
	Block and brick layers	✓	✓
	Steel fixers	✓	✓
	Painters	✓	✗
	Plumbing	✗	✗
	Electrical	✗	✗

Therefore the above findings reveal that there is a relationship between risky or toughness of the particular work and alcohol abuse behaviours. Despite the fact that workers may have historical background for abusing alcohol, they tend to defend their working conditions in regards to their behaviours.

Various studies have reported the same findings [11], [9], [4] but there is not clear explanation relating other works trade with low alcohol abuse behaviors. Below interviews provides insight to the above contention;

<sup>4</sup> 100ml plastic packed liquor with 35% alcohol content; currently banned by Authorities but locally available

*"We are closely supervised as our works require much care as compared to the masonry or steel fixing works. If few wires have been wrongly fixed it may cause disasters"* (Response from a male electrician with 3 years of experience. Similar finding was observed in similar sites).

*"We are not even allowed to smoke cigarettes at the job area, while the masonry and steel fixers can smoke anytime around their working area, so how can we even drink even if we wanted to?"* (Response of electrician with 6 year of experience. Similar finding was observed in similar sites).

*"Since they are used to it we allow them to drink and smoke a little bit as it is evident that their performance increases. But we cannot allow an electrician to do the same as the masonry people due to risk in the electrical works, you need to be completely sober"* (Response from a site supervisor with 10 years of experience. Similar findings were observed in other sites).

Close supervision and restriction imposed by the site supervisors have a positive impact in preventing workers from abusing alcohol at the construction sites. The findings also reveals that site supervisors have different perceptions regarding when and where the workers maybe allowed smoking or drinking few amounts of alcohol, as electricians are strictly prohibited from alcohol while masons are allowed certain amounts to enhance their productivity.

### **3.4. Access to Alcohol and Illicit Drugs in the Construction Sites**

#### **3.4.1. Self Smuggling Techniques**

Although quite risky, few construction workers (25 out of 100 respondents) admitted to smuggle alcohol, khat and cannabis at the construction. Below are some ways used to smuggle alcohol, khat and cannabis to construction site;

*"Since we are allowed to smoke cigarettes at the site, we mix cannabis with normal tobacco and use a normal emptied cigarette bars to refill the mix"* (Other 30 cigarettes smoking construction workers admitted using the same method).

*"I use ½ or 1½ litres empty water bottle to carry the alcohol to the site, and since the colour of the liquor is just like the colour of the water no one has ever noticed"* (Other 60 construction workers admitted using the same method to bring alcohol into the site).

Therefore workers uses same ways to illegally carry alcohol and drugs at the construction sites. And their methods involve the use of items which are allowed to enter into the site without undergoing any inspections. Simple inspection such as smell tests of water bottle could reveal the presence of alcohol.

Other techniques includes hiding cannabis in under cloths, hiding plastic packets of liquor in socks and under cloths and hiding alcohol or cannabis in their tool box and other tools such as hammer handles, spirit level. Preventing workers from moving with tools to and from the construction site could minimize such events.

#### **3.4.2. Third Party Smuggling**

In some sites inspections are done quite intensively to the extent where smuggling alcohol in under cloths has been difficult. In these sites workers have come up with various ways as below interviews reveal;

*"We ask the women who bring food at the site to carry our cannabis bars and also we ask the bring alcohol as some of them own shops which sell cheaply plastic packed liquor and some make local brews at their homes"* (Other 35 construction workers admitted using the same method to bring alcohol, khat and cannabis into the site).

*"I make local brew at my home and I am also temporarily employed to bring food to workers every day. So sometimes if asked I bring some local brews hidden in 20 litres drinking water containers and sell to the workers. I have never been inspected or suspected because even the supervisors and the security personnel buy my local brew"* (Response from a 35 year old woman who was a food vendor in one of the site and has been working as a construction site food vendor for 6 years. In all 5 sites in rural areas the same was observed).

*"We pay the site security guards to bring the alcohol and cannabis to the site, since they are not inspected by any one, and they can leave the site at any time during the working hours"* (In 8 sites out of 15 sites visited the same was observed).

The above reveal that there is a high demand of alcohol and illicit drugs among construction workers as they use various methods to ensure their access to the alcohol or illicit drug is not compromised. Further, both permanent (security guards) and temporary (food vendors) workers at the construction sites are responsible for smuggling alcohol and illicit drugs at the construction sites.

#### **3.4.3. Awareness on Effects of Alcohol Abuse and Illicit Drug Use among Construction Site Workers in Construction Sites**

All the workers interviewed in the study were aware of the effects of alcohol abuse and illicit drug use at the construction sites. Construction site workers are fully aware on the impacts of abusing alcohol at the construction sites;

*"I agree with you, accidents may happen if I get drunk, but it has never happened before. The only weakness I have when I am high is the use of harsh words to my fellow workers"* (Response from a male site unskilled worker with 3 years of experience. Similar findings were observed in other sites).

*"I have had only one accident for the past 4 years, and I always get a little high before I start my work. Maybe I will consider stopping if I get a real accident or fall sick"* (Response from a male site skilled worker with 7 years of experience. Similar findings were observed in other sites).

*"We are used to drinking alcohol in our daily works, even in farming activities in our village we do the same, it is our way of life. I know you may fall or make bad decisions when you are drunk"* (Response from a male site skilled worker with 6 years of experience. Similar findings were observed in

other sites).

*“Yes there are healthy related impacts for example lung and liver diseases and even heart diseases but this is just the same as for those who are not working in construction sites”* (Response from a male site skilled worker with 6 years of experience. Similar findings were observed in other sites).

Understanding the impacts of abusing alcohol and using illicit drugs in construction sites does not hinder the construction workers from practising these activities. Most of the construction workers have a long term history or rather experience of abusing alcohol in work place i.e. in farming activities especially at sites located in rural areas it is a norm for individuals to consume alcohol or to smoke cannabis before or during their activities.

Furthermore, workers who have not been involved in any accidents as the result of alcohol abuse tend to ignore the known impacts of working under the influence. Thus good or bad experience of the workers in relation to abusing alcohol or using illicit drug has a great influence on the worker’s perception.

Accidents resulted from alcohol abuse and illicit drug users have been reported in various construction sites;

*“Workers fight over minor misunderstandings, and when you make a scrutiny you will find that most of them use cannabis either before coming to the site or secretly within the site compounds”* (Response from a site supervisor from one construction site. Similar workers physical conflicts resulted from being under the influence of illicit drugs was reported).

*“One time one unskilled workers carried heavy loads of concrete on his back and failed to negotiate the stairs; he fell and broke his back. There are several accidents here at the site where workers behave quite strangely when they are under the influence of alcohol or illicit drugs”* (Response from a site supervisor from one construction site. Similar were reported in various sites).

Unnecessary risk taking behaviours which often results to accidents have been reported to occur in various visited sites. On the other hand construction site workers are fully aware on such impacts. The same findings were observed in the study by [14] and [15].

#### 3.4.4. Controlling Alcohol Abuse and Illicit Drug Use in Construction Sites

Construction supervisors have introduced various techniques to control and prevent workers from abusing alcohol and using illicit drugs on site. The findings under the study found few sites implementing these strategies, table 3.3 presents more details.

From the findings in Table 3.3 (appendix A), there were few sites (2 out of 15) inspecting and testing workers to check their status in regards to alcohol or illicit drug usage were observed. The same was observed in studies by [14], [15] and [9]. Although such procedure is a requirement as

per OSHA regulations, the absence of routine checks of testing facilities by the OSHA inspection officers has contributed much on bleaching of such conduct;

*“OSHA inspection officers only check for the presence of fire safety and protective gear, we have never been inspected for alcohol testing tools”* (Response from one of site supervisors. Similar findings were observed in other sites).

Furthermore, the provision of education on the awareness on alcohol abuse and illicit drug use was not observed in most of construction site. More or all of the emphasis is given in the education towards safety procedures and HIV/Aids education;

*“We always receive training on the protective gear and HIV/Aids, but specifically on the use of alcohol or illicit drugs we rarely discuss those issues in the training, unless someone was fired due to alcohol abusive behaviour”* (Response from a male site unskilled worker with 3 years of experience. Similar findings were observed in other sites).

## 4. Conclusions

Construction sites workers are quite aware on the impacts of alcohol abuse and illicit drug use in the workplace. The findings show that most of the workers abusing alcohol at the construction have a history of the same behaviour even outside their workplace. The customs of drinking alcohol in the daily activities such as farming has contributed much in enhancing such behaviour at the construction sites.

Lack of inspection procedures, testing procedures to uncover presence of alcohol intoxication or illicit drugs possession on many constructions sites have contributed much in allowing workers to abuse alcohol in their workplaces.

Less awareness education provision in the areas of alcohol and illicit drugs in workplace has hindered to efforts to control alcohol abuse at the construction sites. There is much emphasis on personal safety such as adherence to protective gears and HIV/Aids awareness in all the construction visited in this study as compared to alcohol abuse and illicit drug use in workplace.

Of certain interest cigarettes are not prohibited in many constructions sites, as the results workers use the opportunity to smoke cannabis as discussed earlier. Most of the construction sites allow smoking breaks to all workers who smoke at the construction sites.

The study has revealed that both construction site workers and supervisors are responsible towards alcohol use and drug abuse at construction sites; hence it is the important for both parties to play a role in managing the situation.

The empirical data of this study has revealed the need for improvement in the policy for health and safety at the construction with regards to the areas of alcohol use and drug abuse by construction workers and has shed light on various motives which were not previously addressed.

## Appendix A

**Table 3.3.** Prevalence of various techniques for controlling alcohol abuse and drug use in construction sites (Key **✗** = absence of the tool, **✓** = presence of the tool)

Control and Preventing Tool		Construction Site Visited															Presence in site
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
1.	Workers physical inspections	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	2 sites
2.	Testing workers for alcohol or drugs	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	2 sites
3.	Routine site inspections	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	1 site
4.	Alcohol and Illicit drugs prohibition policy	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	10 sites
5.	Restriction of workers exits <sup>1</sup> during working hours	✓	✓	✓	✗	✗	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	4 sites
6.	Awareness provision <sup>2</sup>	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	None
7.	Disciplinary action on breach of alcohol prohibitions policy	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	All sites <sup>3</sup>

- Notes**
1. Movement of site workers in and out of the site boundaries and fences
  2. Provision of education and training on the matters concerning directly to alcohol abuse and illicit drug use in construction sites
  3. The disciplinary action was taken to workers who arrived at the site with observable levels of alcohol intoxication

## REFERENCES

- [1] Biggs, H.C., and Williamson A.R., 2012, Safety Impacts of Alcohol and Other Drugs in Construction: Development of an Industry Policy and Cultural Change Management Program. Proceedings 28th Annual ARCOM Conference, 3-5 September, Edinburgh, United Kingdom, Association of Researchers in Construction Management, 445 - 454.
- [2] Blume, S.B., 1998, Alcohol and Drug Abuse in the Encyclopaedia of Occupational Health and Safety. International Labour Office, 4th Ed., 1572 – 1577.
- [3] Chandler, G., 2014, Reducing Alcohol and Substance Abuse: A Benefit of Workplace Housing in Oil, Gas and Construction Industries. White Paper 04.14, 1 10.
- [4] Cook, R.F., Hersch, R.K., Back, A.S., and McPherson, T.L., 2010, The Prevention of Substance Abuse among Construction Workers: A Field Test of a Social Cognitive Program. The Journal of Primary Prevention, 25(3): 337 – 57.
- [5] Frone, M. R., 2006, Prevalence and Distribution of Alcohol Use and Impairment in the Workplace: A U.S. National Survey. Journal of Studies of Alcohol, 67: 147 – 156.
- [6] Frone, M. R., 2006, Prevalence and Distribution of Illicit Drug Use in the Workforce and in the Workplace: Findings and Implications from a U.S. National Survey. Journal of Applied Psychology, 91(4): 856 – 869.
- [7] Greenberg, M., Hamilton, R., Toscano, G., 1999, Analysis of Toxicology Reports from the 1993–94 Census of Fatal Occupational Injuries. Compensation Working Condition, 26 – 28.
- [8] Higgins, D.N., Casini, V.J., Bost, P., Johnson, W., Rautiainen, R., 2001, The Fatality Assessment and Control Evaluation Program's Role in the Prevention of Occupational Fatalities. Injury Prevention Journal, 7: i27 – i33.
- [9] Kikwasi, G., 2015, Alcohol Abuse and Illicit Drug Use on Construction Sites; a Norm or an Emerging Issue? Association of Schools of Construction of Southern Africa 2 - 4 August 2015, Durban, South Africa The Ninth Built Environment Conference, 363 - 372.
- [10] Laad, P.S., Adsul, B.B., Chaturvedi, R.M., and Shaikh, M., 2013, Prevalence of substance abuse among construction workers, Indian Journal of Research, 2(3): 281 – 282.
- [11] Larson, S. L., Eyerman, J., Foster, M. S., and Gfroerer, J. C., 2007, Worker Substance Use and Workplace Policies and Programs. Rockville, Substance Abuse and Mental Health Services Administration, Office of Applied Studies, DHHS Publication No. SMA 07-4273, Analytic Series A – 29.
- [12] Lewis, R.J., and Cooper, S.P., 1989, Alcohol, Other Drugs and Fatal Work-Related Injuries. Journal of Occupation Medicine. 31, 23 – 28.
- [13] Ntuli, M., Emuze, F.A. and Monyane, T., 2015, The Impact of Substance Abuse in Construction: Examples from Bloemfontein, South Africa. Proceedings of the 6th International Conference on Engineering and Production Management, 2 - 4 September, Gold Coast, Australia, 47 – 56.
- [14] Pidd, K., Roche, A.M., and Buisman-Pijlman, F., 2011b, Intoxicated Workers: Findings from National Australian Survey. Addiction, 106(9): 1623 – 1633.
- [15] Pidd, K., Roche, A.M., and White, M., 2011a, Workplace Drug and Alcohol Testing. National Centre for Education and Training on Addiction, Flinders University, Adelaide.
- [16] Pidd, K., Shtangey, V., and Roche, A.M., 2008, Alcohol Use in the Australian Workforce: Prevalence, Patterns and Implications. National Centre for Education and Training on Addiction, Flinders University, Adelaide.
- [17] Possi, M.K., 1996, Effects of Drug Abuse on Cognitive and Social Behaviours; a Potential Problem among Youth in Tanzania. Utafiti, 3(1): 111 – 128.
- [18] Ramchand, R., Pomeroy, A., and Arkes, J., 2009, The Effects

- of Substance Use on Workplace Injuries. Rand Centre For Health and Safety in the Workplace. Santa Monica, CA.
- [19] Ramirez, M., Bedford, R., Sullivan, R., Anthony, T.R., Kraemer, J., Faine, B., and Peek-Asa, C., 2013, Toxicology Testing in Fatally Injured Workers: A Review of Five Years of Iowa FACE Cases. *International Journal of Environmental Research and Public Health*, 10:6154 – 6168.
- [20] Spicer, R., Miller, T., and Smith G., 2003, Worker Substance Use, Workplace Problems and the Risk of Occupational Injury: A Matched Case-Control Study. *Journal of Studies on Alcohol*, 64 (4):573 – 577.