

**WORK RELATED INJURIES AMONG CONSTRUCTION INDUSTRY
WORKERS IN DAR ES SALAAM CITY: EXPLORING FACTORS AND
PREVENTION STRATEGIES**

Oscar B Mwaibabile, (BS)

**Master of Public Health Dissertation
Muhimbili University of Health and Allied Sciences
October, 2019**

**Muhimbili University of Health and Allied Sciences
School of Public Health Social Sciences**



**WORK RELATED INJURIES AMONG CONSTRUCTION INDUSTRY WORKERS IN
DAR ES SALAAM CITY: EXPLORING FACTORS AND PREVENTION STRATEGIES.**

By

Oscar B Mwaibabile, (BS)

**A Dissertation Submitted in (Partial) Fulfilment of the Requirements for the Degree of
Master of Public Health of the Muhimbili University of Health and Allied Sciences
October, 2019**

CERTIFICATION FOR EXAMINATION

The undersigned certify that have read and hereby recommend for examination of the dissertation entitled“’ *WORK RELATED INJURIES AMONG CONSTRUCTION INDUSTRY WORKERS IN DAR ES SALAAM CITY: EXPLORING FACTORS AND PREVENTION STRATEGIES*’”, in fulfillment of the requirements for the degree of Master of Public Health of Muhimbili University of Health and Allied Sciences.

Dr. Rongo L.M.B

(Supervisor)

Date: _____

Dr. Sirili, N

(Co-Supervisor)

Date: _____

DECLARATION

AND

COPYRIGHT

I OSCAR B MWAIBABILE with Reg. No. **HD/MUH/T.407/2017** declares that whatever is written in this dissertation is from my own ideas and from different literatures. It is not a copy of somebody's work.

SignatureDate

This dissertation is a copyright material protected under the Berne Convention, the Copyright Act 1999 and other international and national enactments, in that behalf, on intellectual property. It may not be reproduced by any means, in full or in part, except for short extracts in fair dealing, for research or private study, critical scholarly review or discourse with an acknowledgement, without the written permission of the Directorate of Postgraduate Studies, on behalf of both the author and the Muhimbili University of Health and Allied Sciences.

ACKNOWLEDGEMENT

I, first, thank the Almighty Lord for giving me energy, wisdom and passion in the whole process building this work.

I extend my sincere grateful thanks to Dr. Rongo L.M.B and Dr. Sirili N, my supervisors, for their time and expertise in grooming me to accomplish this work.

Furthermore, I would also like to express my gratitude to the rest of the teaching and administrative staff of the MUHAS School of public health and social sciences for their teaching, constructive criticism and guidance that steered to the accomplishment of this work.

I would also like to acknowledge my study participants and research assistants for their time and willingness to participate. The three construction companies namely Imperial Construction, Masasi Construction and CRJE East Africa and their respective board members authorities as well as the workers for their support during data collection.

Special thanks to my family for the time, love and encouragement that gave me energy to strive this far.

Lastly, the accomplishment of this study required the involvement of many individuals, my fellow students, relatives and friends, whom I may not mention all of them here, but I am really grateful to you all.

DEDICATION

To my lovely parents, father and mother, Benford Mwaibabile and Jaqueline Malya.

ABSTRACT IN ENGLISH

Background: Work-related injuries in the construction industry is a public health problem in Tanzania. Different causes of work-related injuries are known but factors for work-related injuries in the construction industry are not well known in Dar es Salaam City. Therefore, this study intended to explore factors for work-related injuries, the available prevention strategies and construction workers experience on the available prevention strategies of work-related injuries in the construction industry in Dar es Salaam City.

Objective: The aim of this study was to explore factors for work-related injuries, explore the available prevention strategies and analyze construction workers experiences on the available prevention strategies of work-related injuries in the construction industry in Dar es Salaam City.

Method: A cross-sectional explorative study design using a qualitative approach was used. A purposive sampling method was used to sample construction workers and supervisors in three selected construction industries in Dar es Salaam City for the study. In-depth interview guides and focus group discussions guides were used to collect data. Data were analyzed using content analysis with the aid of NVivo qualitative data analysis computer software.

Results: The study found factors of work-related injuries in the construction industry in Dar es Salaam City to be laser fair behavior of construction workers, falls from higher heights by construction workers, substance abuse among construction workers and capacity inadequacy of construction industry.

The study also found that available prevention strategies for work-related injuries in Dar es Salaam City to be available health and safety education, ensuring the good working environment, provision of personal protective equipment and other measures and peer to peer initiatives.

The study uncovered the following in terms of construction workers experiences on the available prevention strategies of work-related injuries in the construction industry in Dar es Salaam City. Concern on the quality of the prevention measures offered, feeling on the decline in the magnitude of work-related injuries and a sense of underestimated values on workers welfare.

Conclusion: Work-related injuries in the construction industry are mainly caused by both human factors (factors which are caused by construction workers such as carelessness) and non-human factors (factors which are not caused by construction workers such as lack of safety rules and policy). There are different preventions measures that are employed to prevent injuries in the construction industry. The available prevention strategies employed in the construction industry

are perceived to be of low quality. Despite being perceived to be of low quality, they still prevent work-related injuries in the construction industry. Therefore, the quality of prevention measures offered should be improved.

ABSTRACT IN KISWAHILI

Utangulizi: Majeraha yanayotokana na kazi katika sekta ya ujenzi ni tatizola umma nchini Tanzania. Sababu tofauti za majeruhi yanayotokana na kazi hujulikana lakini sababu zinazozo sababisha majeraha yanayotokana na kazi katika sekta ya ujenzi hazijulikani katika mji wa Dar es Salaam. Kwa hiyo, utafiti huu unalenga kujifunzasababu zinazozo sababisha majeraha yanayotokana na kazi, mikakati iliyopo ya kuzuia majeraha yanayotokana na kazi na maoni ya wafanyakazi wa ujenzi juu yamikakati iliyopo ya kuzuia majeraha yanayotokana na kazi katika sekta ya ujenzi katika jiji la Dar es Salaam.

Lengo: Lengo la utafiti huu lilikuwa ni kutambuasababu zinazozo sababisha majeraha yanayotokana na kazi, mikakati iliyopo ya kuzuia majeraha yanayotokana na kazi na maoni ya wafanyakazi wa ujenzi juu ya mikakati iliyopo ya kuzuia majeraha yanayotokana na kazi katika sekta ya ujenzi katika sekta ya ujenzi jiji la Dar es salaam.

Mbinu: Mtazamo wa utafiti wa utafiti unaovuka msalaba unatumia mbinu za ubora uliotumiwa. Njia ya kupima sampuli ilitumika kwa kupima wafanyakazi wa ujenzi na wasimamizi katika kampuni tatu za ujenzi zilizochaguliwa jiji la Dar es salaam kwa ajili ya utafiti. Mahojiano ya kina na miongozo ya majadiliano ya kikundi ilitumiwa kukusanya taarifa. Taaarifa ilikuwa kuchambuliwa kwa kutumia uchambuzi wa maudhui kwa kufuata hatua tofauti. Kisha ilitangazwa kwenye programu ya kompyuta (NVivo 10) kwa uchambuzi zaidi.

Matokeo: Uchunguzi umegundua sababu zinazozo sababisha majeraha yanayotokana na kazi katika sekta ya ujenzi katika sekta ya ujenzi katika jiji la Dar es Salaam kuwa tabia ya hatarishi ya wafanyakazi wa ujenzi, kudondoka kutoka juu ya majengo wakati wa ujenzi, matumizi mabaya ya madawa ya kulevya kati ya wafanyakazi wa ujenzi na udhaifuuliopo katika sekta ya ujenzi.

Utafiti huo pia uligundua kuwa mikakati iliyopo ya kuzuia majeraha yanayotokana na kazi katika jiji la Dar es Salaam, kuwa na elimu ya afya na usalama, kuhakikisha mazingira mazuri ya kazi, utoaji wa vifaa vya kinga binafsi na hatua nyingine na jitihada za wenzao.

Utafiti huo ulipatamaoni ya wafanyakazi wa ujenzi juu ya mikakati iliyopo ya kuzuia majeraha katika sekta ya ujenzi katika jiji la Dar es salaam. Ni pamoja na, Kuwa na mashaka juu ya ubora wamikakati iliyopo ya kuzuia majeraha katika sekta ya ujenzi, kupungua kwa majeraha yanayotokana na kazi katika sekta ya ujenzi jiji la Dar es Salaam kuwa na kuhisi kwamba wafanyakazi wahawajaliwi, whwapewi kipaumbele na hawaheshimiwi na wahusika katika sekta ya ujenzi.

Hitimisho: Majeraha yanayotokana na kazi katika sekta ya ujenzi yanasababishwa na sababu zote za binadamu (sababu zinazosababishwa na wafanyakazi wa ujenzi kama vile kutokuwa makini na kufuata sheria za kazi) na mambo yasiyo ya binadamu (sababu ambazo hazisababishwi na wafanyakazi wa ujenzi kama vile ukosefu wa sheria za usalama na sera katika sekta ya ujenzi) . Kuna mikakati iliyopo ya kuzuia majeraha yanayotokana na kazi katika sekta ya ujenzi. Mikakati iliyopo ya kuzuia majeraha katika sekta ya ujenzi inaonekana kuwa na ubora mdogo. Licha ya kuonekana kuwa ya ubora mdogo, bado inasadia kuepusha majeraha yatokano na kazi katika sekta ya ujenzi. Kwa hiyo, mikakati iliyopo ya kuzuia majeraha yanayotokana na kazi katika sekta ya ujenzi inapaswa kuboreshwa.

TABLE OF CONTENTS

Certification for Examination	ii
Declaration and Copyright.....	iii
Acknowledgement	iv
Dedication	v
Abstract in English.....	vi
Abstract in Kiswahili	viii
List of Tables	xiii
List of Abbreviations	xiv
Operational Definitions of Terms.....	xv
CHAPTER ONE	1
1.0 INTRODUCTION	1
1.1 Background Information.....	1
1.2 Statement of the problem.....	2
1.3 Descriptive Diagram	3
1.4 Rationale of the study	3
1.5 Main research question	4
1.6 Specific research questions	4
1.7 Broad study objective	4
1.8 Specific study objectives.....	4
CHAPTER TWO	5
2.0 LITERATURE REVIEW	5
2.1 The context and prevalence of work-related injuries in construction industries	5
2.2 Factors of work-related injuries in construction industry	5
2.3 Available prevention strategies of work-related injuries in construction industry	6
2.4 Construction workers experiences on the available prevention strategies.....	7
CHAPTER THREE	8
3.0 MATERIAL AND METHODS	8
3.1 Study area.....	8
3.2 Study design.....	8

3.3	Study population	8
3.4	Study sample size.....	9
3.5	Sampling procedures and techniques applied	9
3.6	Data collection tools (instrument) and techniques.....	9
3.7	Recruitment and training of research assistants.....	11
3.8	Ethical issues and consideration	11
3.9	Data collection procedure	11
3.10	Data Management	12
3.11	Data Processing and Analysis	12
3.12	Trustworthiness.....	12
3.13	Dissemination of the research findings.....	13
CHAPTER FOUR.....		14
4.0	FINDINGS	14
4.1	Overview	14
4.2	Description of study participants	14
4.3	Factors for work-related injuries in construction industries	15
4.3.1	Laser fair behavior of construction workers	15
4.3.2	Substance abuse by construction workers.....	16
4.3.3	Fall from heights by construction workers	17
4.3.4	Capacity inadequacy in construction sites	17
4.4	Available prevention strategies of injuries in the construction industry.....	19
4.4.1	Availability of health and safety programs	20
4.4.2	Ensuring a good working environment.....	20
4.4.3	Provision of personal protective equipment and other measures despite limited resources	21
4.4.4	Peer to peer initiatives.....	21
4.5	Workers experience on the available prevention strategies in construction industry	22
4.5.1	Concern on the quality of the prevention measures offered	23
4.5.2	Feelings of the decline of magnitude of injuries.....	23
4.5.3	Feeling of underestimated values on workers welfare.....	24

CHAPTER FIVE	25
5.0 DISCUSSIONS.....	25
5.1 Overview.....	25
5.2 Factors for work-related injuries in the construction industry.....	25
5.3 Available prevention strategies for work-related injuries in the construction industry	26
5.4 Workers experiences on the available prevention strategies in the construction industry.	27
 CHAPTER SIX	 29
6.0 CONCLUSION AND RECOMMENDATIONS	29
6.1 CONCLUSION.....	29
6.2 RECOMMENDATIONS.....	29
 REFERENCES.....	 30
APPENDICES	33

LIST OF TABLES

Table 1	Participants characteristics.....	17
Table 2	A summary of categories and subcategories.....	17

LIST OF ABBREVIATIONS

FGDs	Focus group discussions
IDIs	In-depth interviews
ILO	International labor Organization
MUHAS	Muhimbili University of Health and Allied Sciences
NAOT	National Audit of Tanzania
OSH	Occupation Safety and Health
OSHA	Occupation Safety and Health Administration
PPE	Personal protective equipment
SPSS	Statistical package for social sciences
WRI	Work related injuries

OPERATIONAL DEFINITIONS OF TERMS

Work interference	All factors that might interfere with doing a certain type of work (4).
Prevention strategies	These are different mechanisms suggested by different authors so as to reduce work related injuries in construction industry. These includes the effective use of Personal Protective Equipment, training of both workers and supervisors on safety practices, supervision and inspection skills (9).
Work	Every employment, business, calling or pursuit over which the legislature has jurisdiction (14).
Worker	A person engaged in an occupation or work (11).
Injury	The reported work related to physical damage of the body tissues caused by accidents or by exposure to environmental stressor in the last one year (18).
Fatal injuries	This means a personal injury resulting in death of the injured person (3).
Non-fatal injury	This is a bodily harm resulting from severe exposure to an external force or substance (mechanical, thermal, electrical, chemical, or radiant) or a submersion. This bodily harm can be unintentional or violence-related (19).
Health and safety training	Trainings given to a worker on health and safety in different working industry (24)
Work-related health risk	This refers to any source of potential damage, harm or adverse health effects on something or someone under certain conditions at work (23)
Work-related injury	This is any injury that occurred to a worker in connection with performance of his or her work in construction site (24)
Personal protective equipment	This include items such as gloves, safety glasses and shoes, earplugs or misheard hats, respirators or coveralls, vests and full body suits worn minimize exposure to serious workplace injuries resulting from contact with chemical, radiological, physical, electrical, mechanical or other workplace risks (1).

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background Information

The construction industry is one of the industries which leads to improvement of economic development of both an individual and a country in general worldwide. Despite that, it is also one of the most hazardous industrial sector globally which accounts for higher rates of injuries and fatalities (1).

Work-related construction injuries are the injuries which result from construction sites. These include falling objects from buildings under construction, falling of workers from buildings under construction, injuries caused by machines used in construction sites and the collapse of construction buildings. Work-related injuries in the construction industry have different repercussions to individuals and the family in general. They make individuals be dependent on others. The burden in the country is shared by many individuals from the fewer individuals who are working and hence the country's economy deteriorates (2). The types of injuries caused can either be fatal or non-fatal and they differ from one country to another. Work-related injuries may be prevented by using personal protective equipment effectively at the required time, education to workers, modification of engineering and ergonomics, training and effectively implementing the existing laws to wrong doers in terms of penalties (3).

In Tanzania, the construction industry accounts for more than 50% of capital creation, 5% of domestic product and 9% of employment (Policy of occupational safety and health (OSH), 2009). It also accounts for the highest fatality rate (23.7%) among all sectors in the country and is expected to increase year by year (5). Usually, male construction workers are more compare to female construction workers in this sector. It is the third in terms of work-related injuries and fatalities behind mining and quarrying. There are mainly two types of construction industries which operate in Tanzania. There are international and local which are formal but, in some cases, informal construction industry exists (7).

It has been found that work-related injuries among workers in the construction industry are increasing worldwide due to the high rate of construction activities that take place (1). The number is thought to increase in the future. By analyzing OSHA USA data from 1997-2001, it tells us that 64% of deaths in the construction industry occurred at a depth of more than 10 feet. This is possible since moving objects and machine can fall and crush a worker (8).

Tanzania's population was 52.23 million people in 2014. 25.8million of the total population were working in different economic sectors such as agriculture, hunting and forestry, electricity, manufacturing, fishing, mining and quarrying, and construction industry.5.3% of all workers worked in the construction industry and 41.6% of all workers worked in Dar es Salaam (9). In 2012 it was estimated that the proportion of workers in the construction industry in Tanzania had increased by 2.9% (10).

Tanzania like many countries is trying to cope with work-related injuries through different mechanisms and strategies including adapting to different International labor organization (1) strategies on prevention of work-related injuries in construction industries. This has also been made possible through the ministry of works. Strategies are mainly provided at the ministry from OSHA and therefore transferred to individuals involved in construction and other occupational industries across the country. This is done by OSHA experts.

1.2 Statement of the problem

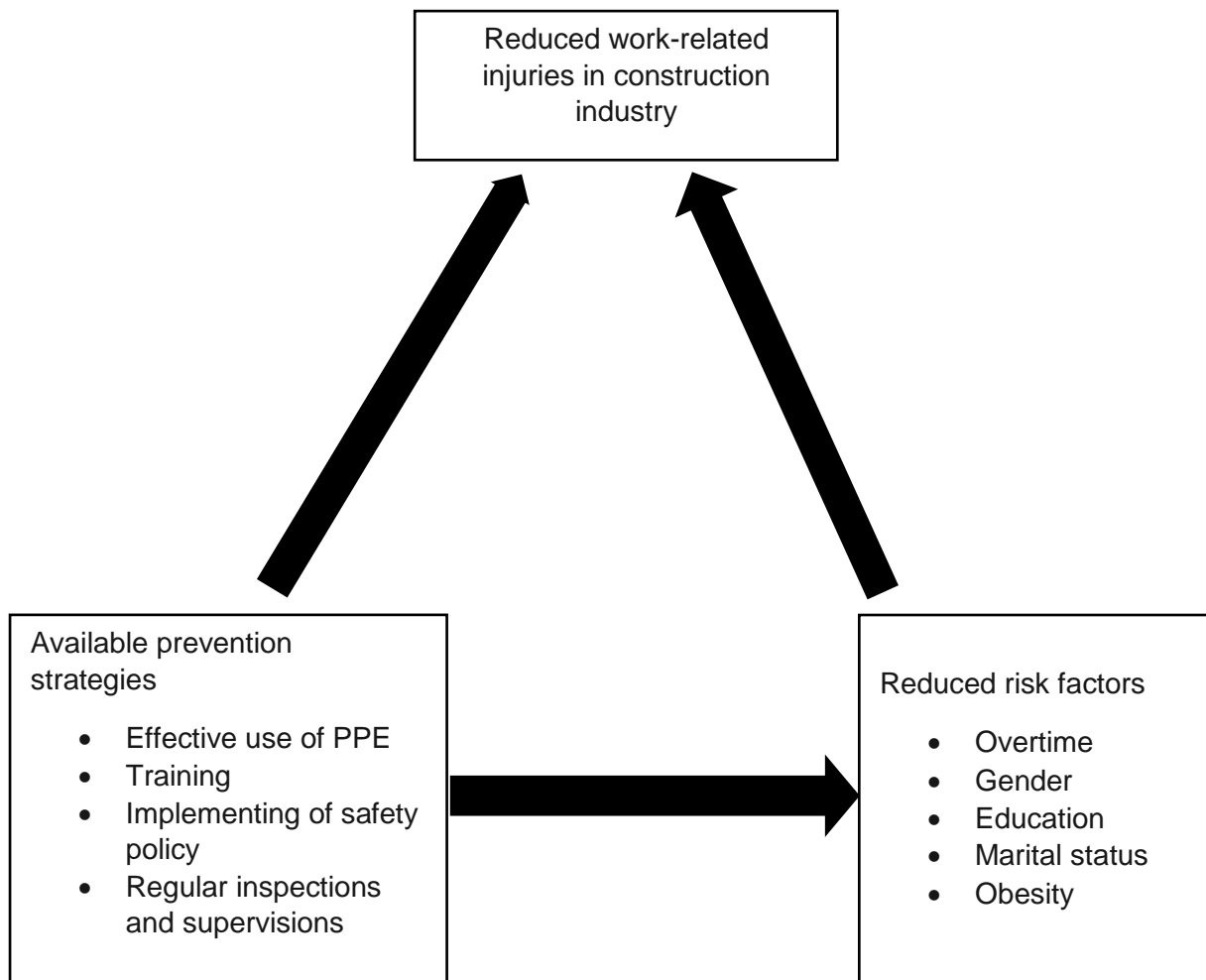
Work-related injuries are still a public health problem in many countries (5). Dar es Salaam city is the most affected city by work-related injuries in the country due to the high rate of construction activities taking place on a daily basis (11).

There are different factors which account for work-related injuries in the construction industry such as management and individual factors (12). Different solutions have been suggested by different scholars such as the availability of personal protective equipment, training of workers in the construction industry, the existence of regular checkups in the construction industry and implementation of OSHA laws (13).

Although it has been explored in other parts of the world but in terms of Tanzania, more exploration is needed. The context of other countries is different from Tanzania. Furthermore, the solutions provided may be different from Tanzania. Therefore, this study aims at exploring factors of work-related injuries among workers and prevention strategies in the construction industry in Dar es Salaam City.

Possible results will be used by the local community, neighboring places and other relevant authorities in formulating further policies and guidelines on public health to control and manage work-related injuries in the construction industry in Dar es Salaam City.

1.3 Descriptive Diagram



Sources: Author's own descriptive diagram 2018

The available prevention strategies aim at minimizing risk factors for work related injuries in construction industry. Therefore, if risk factors have been minimized then work-related injuries among workers in construction industry will somehow decrease in magnitude.

1.4 Rationale of the study

The findings of this study add to the body of knowledge on the factors for work-related injuries and available strategies in the construction industry in Tanzania. Furthermore, the findings from workers' experiences can act as an eye-opening helping to re-examine whether the prevention strategies are adequate or not. The findings are useful for academicians, OSHA, students and the general population at large who are concerned and continuously affected in one way or another by work-related injuries in the construction industry in Tanzania.

1.5 Main research question

What are factors for work-related injuries among workers and the available prevention strategies in construction industry in Dar es Salaam City?

1.6 Specific research questions

- i. What are the factors for work-related injuries among workers in construction industry in Dar es Salaam City?
- ii. What are the available prevention strategies to reduce work-related injuries among workers in construction industry in Dar es Salaam City?

1.7 Broad study objective

To explore factors for work-related injuries among workers and the available prevention strategies in construction industry in Dar es Salaam City

1.8 Specific study objectives

- i. To identify factors for work-related injuries among workers in construction industry in Dar es Salaam City
- ii. To explore the available prevention strategies for work-related injuries among workers in construction industry in Dar es Salaam City
- iii. To analyze construction workers experiences on the available prevention strategies for work-related injuries in Dar es Salaam City.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 The context and prevalence of work-related injuries in construction industries

Work-related injuries are the types of injuries which occurs when one is at work or during the process of work. Construction injuries can be grouped into fatal and non-fatal injuries. Fatal injuries are the types of injuries which lead to death while non-fatal injuries are the injuries which do not lead to death (1). These may include cuts from machines, falls from height during work, falling of objects to workers and being hit by cars in construction sites. According to the International Labor Organization (1) about 6, 300 workers die daily due to work-related accidents, injuries, and diseases.

Work-related injuries are mainly prevalent in developing countries (14). This is due to the fact that developing countries experience higher rates of accident compared to developed countries due to lack of effective health management practices in the construction industry, reliance on outdated legislation systems and lack of statutory requirements for meeting the health and safety standard (13–18). In Tanzania, the construction industry has been ranked the second most dangerous industry after mining due to a constant increase in fatalities and permanent disabilities that have been experienced been recorded in the country (19).

Work-related injuries in Tanzania is increasing day by day due to the fact that most construction project in the country (mostly Dar es Salaam) on a daily basis. These construction activities lead to a high prevalence of work-related injuries in the construction industry. (5)

2.2 Factors of work-related injuries in construction industry

Worldwide work-related injuries in the construction industry are mainly caused different factors such as human which include human errors and management factors which mainly results from the management perspective in the construction industry (3). Human factors may include not using personal protective equipment or using personal protective equipment but in an ineffective way (12). Also, it includes a lack of concentration while working (21). Management factors include lack of Personal Protective equipment in the workplace and also poor leadership (20). Also, they may be caused by exposures to chemical hazards and physical hazards (22), lack of safety training, low level of climate, heavy workload, work environment, work schedule, lack of warning systems, unsafe behavior and safety practices (23)

In Africa context, work-related injuries in construction sites may also be caused by factors such as lack of adherence to the available occupation health and safety policy at hand (17). Also, in some circumstances, there is no implementation of occupation health and safety policy in some construction industries either intentionally or unintentionally (24). Lack of implementation of occupation health and safety policy is caused by poor government policy. This is usually observed in developing countries (8). They may also be caused by a lack of training to workers about the handling of equipment which will be used during the process and also preventing workers from cave-ins (29). Furthermore, lack of supervisions, non-use of personal protective equipment, lack of inspections, lack of risk assessment and implementation of risk measures, low quality of working behavior (16), manual nature of tasks, poor technology (21), hazardous environment, mental worries and stress, distraction of workers when performing tasks, poor technology (15), chain of events, pressure to complete a task (27), poor safety consciousness of workers and reluctance to invest in safety in construction industries (13).

In Tanzania context, work-related injuries in the construction industry are mainly caused by different factors such as non-use of personal protective equipment (19), lack of supervisions and inspections (30), lack of training and commitment and non-implementation of OSHA regulations in the construction industry (11)

Different authors have discussed different general factors of work-related injuries in the construction industry. Risk factors identified may be different in Tanzania's context. Therefore, risk factors for work-related injuries in construction industries in Dar es Salaam city will be identified.

2.3 Available prevention strategies of work-related injuries in construction industry

Worldwide different prevention strategies have been suggested by different authors to be in use in some of the construction companies these include the provision of clothing or equipment (18), implementing of safety measures, preplanning, and training (6)

In Africa, the following are different prevention strategies implemented in construction industries. These are the use of personal protective equipment (13), the implication of safety regulation, training (32), supervisions and inspections (16). Despite that these prevention regulations existence but still they are very weak and only practices by very few construction companies and to some construction industries they are not implemented at all (24).

In Tanzania context, there are different suggested prevention strategies in the construction industry such as safety training provided by OSHA Tanzania, capacity building, policy and

guidelines enforcement, provision of safety gears, training programmes and safety meetings and implementation of legislation and OSHA laws. These strategies exist but on a very minimal standard. For example, most Tanzanians are not covered by occupational health and safety laws and do not access occupational health and safety services and hence this also applies to construction industries that operate in the country. (33)

Different prevention strategies have been laid forward but the extent to which these strategies operate in the different construction industry is very low and in other settings, they are not applied at all. Therefore, this study will explore the available prevention strategies from workers and supervisors so as to get a clear insight since the information provided so far is limited.

2.4 Construction workers experiences on the available prevention strategies

Worldwide the information about construction workers on available prevention strategies is very scant (20). A study conducted in Costa Rica revealed that a quarter of construction workers indicated that they did not receive health and safety training over the last twelve months (34). On the other hand, construction workers indicated that some extent of training was provided in relation to the available strategies by the employer (12).

In Africa, there are many studies which have been undertaken in relation to work-related injuries in the construction industry (3). They all focus on aspects such as causes of work-related injuries in the construction industry and not construction workers experiences on the available prevention strategies. Therefore, there is scant information in Africa in relation to construction workers experiences on the available prevention strategies.

The information on experiences of construction workers on available prevention strategies is very scant in Africa and Tanzania in general and hence the reason to undertake this study (17)

CHAPTER THREE

3.0 MATERIAL AND METHODS

3.1 Study area

Dar es Salaam is the former capital as well as the most populous city in Tanzania and a regionally important economic center (35). Located on the Swahili coast, the city is one of the fastest growing cities in the world (36). It's one of the 31 regions in Tanzania. it is Tanzania's most prominent city in arts, fashion, media, music, film and television, and a leading financial center, with the Dar es Salaam Stock Exchange (DSE) being the country's first and most important stock exchange market. The city is the leading arrival and departure point for most tourists who visit Tanzania, including the national parks for safaris and the islands of Unguja and Pemba. Dar es Salaam is also the largest and most populous Swahili-speaking city in the world.

It is the capital of the co-extensive Dar es Salaam Region, which is one of Tanzania's 31 administrative regions and consists of five districts: Kinondoni in the north, Ilala in the center, Ubungo, Temeke in the south and Kigamboni in the east across the Kurasini creek. The region had a population of 4,364,541 as of the official 2012 census. Three construction industries were selected in Dar es Salaam. They were used for data collection. It was in the urban setting to which the study was designed. The region, Dar es Salaam, was selected for the study because it has a higher prevalence of work-related injuries and also it is where most of the construction activities take place on a daily basis.

3.2 Study design

This study deployed across-sectional exploratory study design that used qualitative methods of data collection which involved both focus group discussions (FGDs) and in-depth interviews. Burns and Grove (39) postulate that descriptive research is aimed at describing and exploring research phenomena in real life situations. The number of participants ranged from 4 to 12 people as recommended by experts of FGD (37)

3.3 Study population

The study population was construction workers and their supervisors. Patton (41) stresses that richness of the data and analytical capability of the researcher determine the validity and meaningfulness of qualitative data more than the sample size. Since the aim was to obtain rich information from participants and hence selecting the required participants which the researcher thought to have rich information to the research question.

3.4 Study sample size

In qualitative research, there are no fixed rules for sample size (37). The sample size is determined by the number of resources, budget, and the objectives at hand. However, the final sample size was determined by information saturation. Therefore, the minimum sample size of twenty-three informants was involved.

3.5 Sampling procedures and techniques applied

Sampling is the process of selecting a number of study units from a defined study population. In quantitative we mainly use probability sampling but in qualitative studies, we use non-probability sampling technique. The most type of non-probability sampling techniques used is purposive sampling technique (38)

Purposive sampling technique is the type of sampling techniques whereby a certain number of participants required for the study are selected having somehow similar backgrounds.

Therefore, this study used purposive sampling technique as its strategy. This type of sampling technique allowed the judgment of the researcher to be used in the selection of the study respondents.

A total of 23 participants (17 construction workers and 6 construction supervisors) were selected from three registered construction companies in Dar es Salaam region. These (construction companies) were Imperial Construction located in Upanga, Masasi Construction located in Kariakoo and CRJE East Africa located at City Centre. Participants were selected upon different factors. Construction workers were sampled based on working experience (having a working experience of 3 months and above in that specific construction company). In the case of construction supervisors, they were sampled based on positions they occupied in the construction company. The aim of this was to have participants rich of information required by the research questions.

3.6 Data collection tools (instrument) and techniques

Two qualitative data collection techniques were used in this study. These were focus group discussions (FGDs) and in-depth interviews (IDIs). Also, two data collection tools were used. These were focus group discussion guides and in-depth interview guides. The guides contained questions about the available factors for work-related injuries in the construction industry, the available prevention strategy of work-related injuries in the construction industry and construction workers experiences on the available prevention strategies. These questions were

divided into three sections (contained all three questions) in focus group discussion guides and two sections (The first and second question) in In-depth interview guides. The use of respective interviews guides allowed flexibility for probing. Qualitative researchers are allowed to make use of probes in order to deepen responses to questions. According to Patton (1990), a probe is a follow-up question used to go deeper into the interview responses.

The focus group discussions (FDGs) comprised of 4 to 8 respondents per group (construction workers) and each session had a research assistant to take notes and was moderated by the principal researcher while in-depth interviews (IDIs) comprised of 2 members (2 supervisors) and in each session they only included the respondent and the principal investigator. In-depth interviews lasted from twenty-five to forty-five minutes. Focus group discussions lasted for approximately thirty minutes.

Participants were informed on the use of a tape recorder and also note taking of the discussions. In-depth interview guides were also used to facilitate discussions. Guiding questions were initially written in English and translated in Kiswahili since it was the medium of communication that was used during the study.

The table below indicates data collection techniques and tool that were used for each specific objective

<i>Specific objective</i>	<i>Data collection technique</i>	<i>Data collection tool</i>
1. To identify factors for work-related injuries among workers in construction industry in Dar es salaam City?	Focus group discussions and in-depth interviews	Focus group discussion and in-depth interviews guides
2. To explore the available prevention strategies for work-related injuries among workers in construction industry in Dar es salaam City?	In-depth interviews and focus group discussions	In-depth interview guides and focus group discussions guides
3. To analyze workers experiences on available prevention strategies for work-related injuries in construction industry in Dar es salaam City?	Focus group discussions	Focus group discussions guides

3.7 Recruitment and training of research assistants

Two research assistants were recruited who had at least a bachelor degree and who were somehow aware of the topic and the local conditions of participants and the area under study. They were also residing in Dar es Salaam. The research assistants had two days of orientation to research concept, protocol, collection of in-depth interviews and focus group guides data. Inhere they were taught about how to ask questions in a neutral manner, not showing by words or expression what answers one expects, not showing agreement, disagreement or surprise and recording the answers precisely as they were provided and without sifting or interpreting respondents

3.8 Ethical issues and consideration

The Muhimbili University of Health and Allied Sciences granted ethical clearance for this study (reference numbers are DA.287/298/01A). Permission to conduct the study was obtained from the provided by the construction companies directors, construction companies engineers, and construction companies supervisors and construction companies workers on 13/9/2018, 14/9/2018 and 15/9/2018. Written informed consent was obtained from each informant before commencing the interview or discussion. Confidentiality of the respondents was ensured at all stages of the study.

3.9 Data collection procedure

Research Assistants introduced themselves and the study to respondents. Respondents were requested to provide written consent to participate in the study. The names of respondents were excluded to ensure confidentiality. Interviews and discussions were conducted in privacy to enable respondents to provide information. Focus Group Discussions and In-depth interviews were conducted in a quiet and friendly environment whereby participants were free from each other since participants were having the same background and hence provide information in an open manner. Field data collection was conducted in September 2018.

Pre-testing of the research instruments and research procedures was done with the research assistants. Modifications were made when needed after pre-testing.

The focus group discussions involved construction workers from the selected construction companies while In-depth interview involved construction supervisors. Both the focus groups discussions and in-depth interviews took place in the company's meeting rooms.

3.10 Data Management

Data were collected on a daily basis from the respective area according to plan so as to ensure all contents were extracted. All filled guides recorded interviews, and discussions on the day were checked for completeness and collected by the principal investigator from research assistants on every evening. The in-depth interview process was closely supervised by the principal investigator through follow-ups to respondents and checking the quality of guides.

3.11 Data Processing and Analysis

Audio-recorded interviews and FGDs were first transcribed verbatim and then translated from Swahili to English. Interviews and FGD transcripts were analyzed using qualitative content analysis following Graneheim and Lundman (39). The qualitative content analysis offers the development of categories from the text data inductively; the inductive derivation of categories is important in capturing the experiences of the participants (41). The full transcripts and field notes were first to read and reread by the principal investigator in order to become familiarized with the data and the context. Condensed meaning units were then formed through data reduction. These were related to factors of work-related injuries in the construction industry, the available prevention strategies for work-related injuries in the construction industry and construction workers experience on the available prevention strategies for work-related injuries in the construction industry from the perspectives of construction workers and construction supervisors. The condensed meaning units were read and reread in order to extract the codes. The primary codes were extracted, revisited and final codes were formed. Similar codes were grouped together and through constant comparison were abstracted into subcategories. Sub categories were further analyzed to distinguish their similarities and differences. Similar subcategories were sorted to form categories that reflected the manifest content of the text.

3.12 Trustworthiness

Trustworthiness is attained in a qualitative study when the findings of such a study are worth believing (39). Four main criteria are used to assess the trustworthiness of a qualitative study; credibility, dependability, transferability, and conformity (40). The credibility of the findings of this study was enhanced through the triangulation of informants with experiences and rich information of the study questions. In order to enhance the credibility and dependability of this study, triangulation of data collection techniques, study settings, and researcher were used. Data were collected, using interview guides, focus discussion guides and in three different settings. In order to ensure that the findings reflected on informants' perspectives rather than the researchers'

understanding of the question under study, categories were inductively generated and presented with the support of subcategories and quotes. The transferability of the findings of this study is enhanced through the description of the study setting, context, data collection process, and analysis.

The fact that a Sociologist conducted interviews and discussions might have introduced social desirability from the participants. However, the triangulation of data collection approaches and the fact that the interviewer was not a senior but at the mid-level of his career offset this limitation. Finally, the findings of this study reflect the situation during the period in which data collection for this study was carried out.

3.13 Dissemination of the research findings

The study report was disseminated and made available in the MUHAS library for use. The report was disseminated and made available to the Dar es Salaam City council for use in improving the conditions of workers in relation to work-related injuries in the construction industry. The study was submitted to a journal for publication to make it available for use by the wider community to advance knowledge.

CHAPTER FOUR

4.0 FINDINGS

4.1 Overview

The purpose of this study was to identify factors for work-related injuries, explore the available prevention strategies and analyze construction workers experiences on the available prevention strategies of work-related injuries in the construction industry in Dar es Salaam City.

4.2 Description of study participants

A total of 23 participants were selected for the study (Six supervisors and seventeen construction workers)

Table 1: Participants characteristics

	Supervisors N=6	Construction workers N=17
Age		
20-29 years	2 (33.3%)	9 (52.9%)
30-39 years	3 (50%)	7 (41.1%)
40-49 years	1 (16.7%)	0
60-69 years	0	1 (5.8%)
Sex		
Male	5 (83.3%)	16 (94.1%)
Female	1 (16.7%)	1 (5.9%)
Level of education		
None	0	1 (5.9%)
Primary Education	0	11 (64.7)
Secondary Education	4 (66.7%)	5 (29.4%)
Bachelor Degree	2 (33.3%)	0
Work experience (duration)		
0-1 year	0	17 (100%)
2-3 years	3 (50%)	0
4-5 years	1 (16.6%)	0
6-7 years	1 (16.6%)	0
10-11 years	1 (16.6%)	0

Table 2: A summary of categories and subcategories

Sub categories	Categories
<ul style="list-style-type: none"> • Laser fair behavior • Substance abuse by construction workers • Falls from heights by construction workers • Capacity inadequacy in construction sites (Both human and non-human) 	Factors for work related injuries in construction industry
<ul style="list-style-type: none"> • Availability of health and safety programs • Ensuring a good working environment • Provision of personal protective equipment and other measures despite limited resources • Peer to peer initiatives 	Available prevention strategies in construction industry
<ul style="list-style-type: none"> • Concern on the quality of the prevention measures offered • Feelings of the decline of magnitude of injuries • A sense of underestimated values on workers welfare 	Workers experiences on available prevention strategies

4.3 Factors for work-related injuries in construction industries

From the findings from in-depth interviews and focus group discussions, the study found the main categories responsible for factors of work-related injuries in the construction industry in Dar es Salaam City were Laser fair behavior of construction workers, capacity inadequacy in construction sites, drug usage and falls from heights. These were attributed to the following subcategories; carelessness, giving excuses, not caring for one's own health, non-adherence to available rules and regulations nonuse of personal protective equipment and falling objects (Laser fair behavior of workers). Lack of technical know-how, stress, long working hours, need for money by construction workers, work interference, miscommunication, shortage of personal protective equipment and lack of safety officers (capacity inadequacy in construction sites).

4.3.1 Laser fair behavior of construction workers

From participants experiences, Laser fair behavior of construction workers is a factor for work-related injuries in the construction industry. It is mainly attributed to different subcategories. According to most of the participants, carelessness is the leading cause of work-related injuries in the construction industry. Carelessness was mainly defined by the majority of participants as an act of not being careful while working. Participants narrated that construction workers may

have been assigned a certain task and hence due to carelessness he/she does not do it and hence results in an injury of fellow worker/workers. The task might be to turn off a moving machine. According to participants, not all falling objects in construction industries are caused by carelessness but the majority of them are a result of carelessness. Due to carelessness, a worker working from above may drop tools and equipment to a fellow worker working below and hence injury. Also, items such as bricks may be dropped from above.

Most of the informants defined the meaning of nonuse of personal protective equipment as the act of construction workers not to use the personal protective equipment provided by the construction company. Construction workers do not use the available personal prevention equipment for the intended purpose. Some construction workers use protective helmets for fetching water for bathing. Usually, the outcome is work-related injuries or even sometimes death. Usually, nonuse of personal protective equipment is also a part of lax behavior.

According to participants, construction workers do not take care of their own health. This can be observed in activities and practices that endanger a worker's health. These activities include some construction workers only wear Protective belts so as to be seen as adhering to the rules but in reality, is not and don't take about their safety very seriously. They do not value their own health at all and usually take it for granted. From participants experiences, it was discovered that non-adherence of the available rules and regulations was also a factor for work-related injuries in the construction industry in Dar es Salaam City. Despite the existence of rules and regulations in construction industries but still, some construction worker chooses not to adhere to them. Adherence of these rules is down to an individual.

“ We Africans are used to give excuses such as bad luck but any bad luck is caused by carelessness. You are told to follow certain rules so as to prevent yourself from getting accident but if you fail you suffer the consequences..... You find a worker thinks about his/her problems and hence loses concentration which results to injuries ”. (FGD-1-Construction worker 4)

4.3.2 Substance abuse by construction workers

According to participants substance abuse among construction workers is a factor for work-related injuries in the construction industry. The most types of substance used by construction workers are marijuana and alcohol. And they are mainly used by construction workers aged twenty to twenty-five years and are usually male. These substances are either obtained at home or at the construction site. This indicates that there are pushers (substances sellers) in construction sites. These can either be construction workers or other members involved in the process of construction such as Watchmen and watch women. Also, a construction worker may

use it at home and hence when he comes to work, he is wasted and hence lack of being effective which makes him have low concentration at work and hence may cause injuries.

Participants reported that substance abuse leads to loss of concentration to a worker. When a worker uses drug his body and mind become very tired at ineffective. This prevents a worker from making a good judgment on different aspects of the work taking place in the construction site and hence endangers his coworker.

“.....I can say substance abuse leads to injury at our working site.... You find workers are wasted with alcohol and hence their concentration level is very low and usually leads to injuries”. (FGD-1-Construction worker 5)

4.3.3 Fall from heights by construction workers

From the participant's narrations, fall from higher heights is a factor for work-related injuries in the construction industry. According to participants, this is mainly attributed to the fact that most of Tanzania's construction industries workers are mainly local indigenous whose majority have primary education. They are also not used in working in medium and small heights buildings and therefore if there is a project which involves higher heights it may be a problem. This is because they have no experience of working on higher heights buildings. They don't have that required knowledge on how to behave when working on higher heights buildings. This usually leads to falls from heights and hence injuries.

According to participants, falls from higher heights is also caused by using tools of low quality. These include ladders and protective belts which are of low quality and lack of experience in working on higher heights buildings. This is caused by a lack of inspections of tools used in the construction industry to determine whether they are suitable for a particular type of construction.

“Fall from higher heights happens a lot due to the fact that construction workers do not have the required experiences to operate on higher altitude buildings.... Also, most construction workers are used to work in short and medium heights buildings and therefore not used to higher heights building”. (IDI-1-Construction supervisor 1)

4.3.4 Capacity inadequacy in construction sites

From participants experiences we found the main category to be capacity inadequacies construction sites is a factor for work-related injuries in the construction industry. It consists of both human and non-human factors. It is mainly attributed by different subcategories below. According to most of the participants, the shortage of personal protective equipment is the leading cause of work-related injuries in the construction industry. Shortage of personal protective equipment was mainly defined by the majority of participants as not having the

required personal protective equipment at the required time. Participants narrated that personal protective equipment is not enough at all to construction workers. They are sometimes not available when needed. Participants lacked safety boots and gloves on time. Some construction workers might be doing a certain task in the construction site but surprisingly not all of them will be having the personal protective equipment needed. This is a cause for the majority of work-related injuries in the construction industry. According to construction supervisors, some workers steal the personal protective equipment and go to sell them and hence the shortage.

Participants defined long working hours as the number of hours which workers work without stopping for water or small rest. Participants also indicated that some construction workers may work for more than ten hours nonstop. According to participants, this is very common in the industries which are owned by foreigners mostly Chinese. According to participants narrations, long working hours are also the causes of work-related injuries in the construction industry since a worker who is overworked cannot concentrate more than a construction worker who has had periods of rests. This was also found to occur due to the fact that worker needs the money and therefore they work for long hours so as to get money. Construction workers are paid on the basis of hours they work. Construction workers have their own needs and want, both at family, community and individual level. Therefore, a worker may work for long hours without rest so as to get more money in order to meet his/her own wants and needs. Construction workers may be sleepy but still, do the work in order to get more money and therefore very prone to injury. Therefore, this may result in work-related injury to that specific worker to other workers.

“.....Long working hours leads to injuries. For example, a person working from 7am to 6pm becomes really tired and hence is less concentrated and prone to be injury during work. Also, a supervisor might assign a worker to work for 24 hours without knowing that a worker has working since morning without rest”. (FGD-1-Construction worker 3)

Majority of participants defined miscommunication as the process in which workers and supervisors in construction sites do not contact one another in regards to construction activities taking part in the site. It can also be between a worker. Miscommunication is very dangerous when there is interference of work. The study found that a lack of communication between workers while working leads to injuries. Communication is very vital when there is work interference among workers in the construction industry. It becomes more complex and work-related injuries causer when there is no communication between individual working on different sections in the construction site. Construction workers reported that work interference is a

problem. This causes injury because a person might be up working while other workers down do not know and yet the above worker might fall an object to them due to miscommunication.

According to participants, the safety measures provided are of low quality. Therefore, it is very common for workers in the construction industry to suffer from injuries as a result of those low-quality safety measures employed in construction sites. Construction workers indicated that they might wear protective belts but still get accidents. There is a shortage of personal protective equipment all times in construction sites such as protective gloves and safety boots. Participants might be doing a certain task in the construction site but surprisingly not all of them will be having personal protective equipment needed. This is a cause for the majority of work-related injuries in the construction industry. Participants also indicated that safety officers are not present in construction sites and hence it results in work-related injuries in the construction industry. If the safety officer could be present, they could make sure all needed items regarding safety would be present.

“.....Safety measures provided are not of higher quality.....You might wear a safety belt but still get accident”. (FGD-1-Construction worker 4)

According to participants, it is very common for workers to lose their concentration while doing tasks in construction sites. Most of the times the results are work-related injuries either to that particular worker, to a coworker or both. Loss of concentration is caused by stress. Stress may be caused by different reasons both externally and internally. A worker who is stressed is more likely to be injured than a worker with no stress.

From participants words, most of the local construction workers have no education about the use of modern tools and equipment in construction and hence when there is are new equipment and tools it becomes a problem and can lead to injuries to workers. Workers are used to local equipment such as local handsaws and therefore if they are introduced to use an electric handsaw it may result into problems and therefore it needs time for a worker to adjust to this technology. This is down to lack of technical know-how of using the equipment.

4.4 Available prevention strategies of injuries in the construction industry

From the participant's experiences, we found the main categories responsible for the available prevention strategies of work-related injuries in the construction industry in Dar es Salaam City were the availability of health and safety programs, to ensure good working environment, provision of personal protective equipment and other measures despite limited resources and peer to peer protection initiatives. These were attributed to the following subcategories; health

and safety education, doing a risk assessment, safety meetings, cleaning the environment, provision of personal protective equipment, watching each other's back, being careful and self-awareness.

4.4.1 Availability of health and safety programs

According to participants, construction companies provide health and safety education to construction workers on how to protect themselves in various ways when working in construction sites. It also includes making sure that workers safety is the main priority at work. Workers are made to understand how to protect themselves and fellow workers at work. Moreover, workers are equipped with safety awareness at work. Furthermore, there are safety meetings which take place at a certain interval. Construction supervisors narrated that; they provide general safety meetings on certain intervals. There is also a safety and health committee meeting which takes place every two months. The committee is formed by workers and a representative from the company's board. These safety meetings differed from one construction company. In other construction companies, they take place on a weekly basis and other on a monthly basis. Construction workers indicated that health and safety education increased their awareness of how to protect themselves better against work-related injuries in the construction industry.

“Well...we provide general safety meetings, two times per week. There is also a safety and health committee meeting which takes place after every two months.... Well the committee is formed by workers and a representative from the company's board”. (IDI-1-Construction supervisor 1)

4.4.2 Ensuring a good working environment

From participants words, construction companies make sure that the environment that workers will use in the construction process is clean and safe. Participants defined housekeeping as a process of making the working environment for construction work clean. It is also done by construction companies so as to reduce the risk of work-related injuries in construction sites. This is important so as to know what part of the working environment could cause an injury and remove it. This aims at making sure the environment is safe for both workers and supervisors. This process also includes doing a risk assessment before any construction project is initiated in a construction site. Risk assessment involves inspecting the environment that construction work is going to take place to identify any factor that might cause an injury during the construction process and then rectifying it. This is very important since it reduces work-related injury in the construction industry

“.....We prevent injuries at construction sites by doing risk assessment before doing work so as to know risks available and how we can combat it”. (IDI-2-Construction supervisor 2)

4.4.3 Provision of personal protective equipment and other measures despite limited resources

Despite the shortage of capital, participants indicated that personal protective equipment and other prevention measures towards work-related injuries in the construction industry are provided by construction companies. Few personal protective equipment of high quality are provided. Also, personal protective equipment are provided in the required time when construction workers need to use them. The personal protective equipment provided includes protective gloves, masks, safety hats, safety shoes, overalls, eye protector, and using sound proofs when doing blasting works. Also, construction supervisors indicated that they build a platform when working on higher altitudes and using safety belts.

According to participants, there are ambulances at construction sites to take participants to the hospital when they have suffered from an injury. There is also the existence of first aid kits. These are used to give first aids to participants when they suffer from an injury before taking them to the hospital for further treatment. This helps in stabilizing a participant from the injury suffered. The first aid kit consists of spirit, bandages, and Panadol. Moreover, the construction supervisor narrated that they had registered themselves at the international organization for standards and occupation safety and safety authority and they are also adhering to its standards.

“....As a company we provide personal protective equipment on time.....We provide tools and personal protective equipment needed to our workers such as safety boots, helmets, on danger zones, dust masks, goggles on eyes. In uncompleted lifts we use plywood. Construction workers wear ropes (scaffold belts) around the waist when they are climbing on higher altitudes. Eye goggles are used during welding. We also take safety measures if there is a place, they should not cross we use safety tapes (red markers)”. (IDI-1-Construction supervisor 1)

4.4.4 Peer to peer initiatives

Construction workers narrated different injuries prevention strategies that they employ in the construction industry. These are different mechanisms which construction workers use to protect themselves against work-related injuries in the construction industry. Most of these prevention measures are not provided by construction companies but rather by the construction workers themselves. This means taking care of each other's safety by having each other's backs.

According to construction workers, watching each other's backs is a very important injury prevention strategy in the construction industry. This method is used by most of the workers towards prevention themselves from injuries in construction sites. The main objective is to make sure to watch each other's back whenever they are doing a task at the construction site. If they are doing an activity that might likely endanger other workers health then the workers watching his back will tell him to stop. Watching each other's back helps the workers a lot in preventing themselves from work-related injuries in the construction industry.

From participants experiences, being careful at work is also an effective prevention strategy against work-related injuries in the construction industry. This means being attentive while at work and not doing activities which may endanger your own health and other's health while at work. This mainly involves adhering to the available rules and regulations at the construction site. This includes proper usage of personal protective equipment at the construction site, reporting if there is a shortage of personal protective equipment to supervisors and making sure that the environment clean. Participants also reported that self-awareness is vital in the protection of oneself against work-related injuries. A worker is supposed to understand his/her task as a construction worker and what is expected of him/her while at the construction site. Workers have to be aware of what behaviors can put them at more risk of suffering from injuries in construction sites.

'...Our section of scaffolding we usually watch each other's back and try to tell them if they are doing an action which puts them at risk of an injury.... For example, be careful this tap is not closed. Usually this helps us a lot.it is very rare that an accident occurs when we are watching each other's back''. (FGD-1-Construction worker 4)

4.5 Workers experience on the available prevention strategies in construction industry

According to the participants experiences, we found the main categories responsible for the workers experiences on the available prevention strategies of work related-injuries in construction industry in Dar es Salaam City were concern on the quality of the prevention measures offered, feelings on the decline of magnitude of injuries and a sense of underestimated values on construction workers welfare. These were attributed to the following subcategories; shortage of personal protective equipment, lack of strict rules to foreign supervisors, lack of safety officers, assigning of tasks even if a worker is tired, taking construction workers health for granted and hostility and intimidation of supervisors.

4.5.1 Concern on the quality of the prevention measures offered

Majority of participants showed concerns on the quality of prevention measures undertaken by construction industries. This can be observed in different aspects such as the shortage of personal protective equipment to workers. Personal protective equipment are not available in the required quantity when needed. These personal protective equipment include safety boots, helmet, and gloves. There is also no strict rule for foreigners to adhere to. Foreign supervisors such as the Chinese do not adhere to the rules and laws of the country in term of the construction industry. These supervisors can do anything to construction workers since they know even if they report (construction workers) to the available authorities they won't be punished since they give bribes to some officials involved.

Construction workers also reported that there is a lack of safety officers at construction sites. Majority of participants expressed their frustrations in relation to a lack of safety officers. Even if safety officers are present, they are not enough at all. You might find one safety officer in a construction company having more than five hundred workers. Just this rate gives you a snapshot of the bigger picture.

'...I can say there are no strict rules and regulations which foreign supervisors do not adhere to.....They do not follow rules and regulations of the country since they know they won't be punished because they give bribes and have connections in higher places in the government''. (FGD-2-Construction worker 3).

4.5.2 Feelings of the decline of magnitude of injuries

Majority of participants reported that the magnitude of work-related injuries was decreasing this is mainly due to some prevention measures employed by construction companies. This can be demonstrated by the continued persistence of small injuries in construction industries and the rarity of accidents. In some construction companies, there are no injuries at all. This can be explained by the fact that the prevention measures provided despite being of low quality but are still preventing work-related injuries in the construction industry. This includes the use of personal protective equipment at the required time and the provision of health and safety education.

Participants indicated that the magnitude of work-related injuries was very high in previous years. There were even deaths caused by work-related injuries but due to available prevention strategies, the magnitude of work-related injuries has declined considerably. Now only very small injuries can be found. They include cuts from razor blades and nails.

“.....Due to available prevention strategies employed I believe the magnitude is currently decreasing and hence only small injuries such as cuts by razor blades can be found...”. (FDG-3-Construction worker 4)

4.5.3 Feeling of underestimated values on workers welfare

According to participants, the welfare of construction workers is uncared in different ways. For example, a supervisor might assign workers to another task even if the worker is tired. This is very common on a daily basis in construction industries. Also, supervisors are very intimidating and hostile towards the construction worker. For example, they use words such as do hurry while standing and watching construction worker work. This is a problem since construction workers are not used to working while under strict supervision and hence, they panic. Also, a supervisor might assign a worker to work for twenty-four hours without knowing that a worker has been working since morning without rest. Some foreign workers are very oppressive to local construction workers. They do not want any advice and suggestions from workers even if they are not right on a certain concept concerning work and they treat construction worker inhumanly such as by abusing them in case they make a mistake. Furthermore, construction companies do not take construction workers health serious but rather for granted. Some workers are not given personal protective equipment on time and some are not provided with personal protective equipment at all since their health is taken for granted. Workers usage on personal protective equipment is not even inspected to see if they are using them in the right way. This is due to taking their (construction workers) health for granted. According to participants, construction companies are only interested in making profits. They say safety is expensive so you require time, money and all kind of resources. Usually, construction companies aim for more profit and therefore it may be hard to convince the owner to buy personal protective equipment for construction workers which costs six hundred thousand Tanzanian shillings. but instead may opt for personal protective equipment worth two hundred thousand Tanzanian shillings.

“ Some supervisors are very intimidating and hostile towards workers. For example, they use words such as do hurry while standing and watching you which makes you panicked since we are not used to work under strict supervisions. This may lead into making mistakes and hence a supervisor may abuse you by sayingyou are stupid”. (FGD-1-Construction worker 3)

CHAPTER FIVE

5.0 DISCUSSIONS

5.1 Overview

The study aimed to identify factors for work-related injuries, explore the available prevention strategies and analyze construction workers experiences on the available prevention strategies of work-related injuries in the construction industry in Dar es Salaam City. The study found four factors for work-related injuries and three available prevention strategies towards work-related injuries in the construction industry. Construction workers had concerns about the quality of the available prevention strategies.

5.2 Factors for work-related injuries in the construction industry

Factors for work-related injuries in the construction industry identified in this study are in line with a previous study conducted in South Africa (21). In that study, it was found that low-quality behavior such as non-use of personal protective equipment and carelessness among construction workers to be a factor for work-related injuries. In this study it was found factors for work-related injuries in the construction industry to be nonuse of personal protective equipment and carelessness under laser fair behavior of construction workers hence this shows they are identical. Behaviors such as carelessness and nonuse of personal protective equipment indicate lack of self-awareness. It may indicate that construction workers are ignorant about the use of personal protective equipment.

Factors such as the shortage of personal protective equipment (19), falls from higher heights and lack of supervisions (13) was discovered to be identical between this study and other studies (11).

This study is different from other studies in terms of the results uncovered. Substance abuse among construction workers is different from what was uncovered in other studies. Furthermore, this study discovered that lack of concentration led to work-related injuries among construction workers this is also different from other studies whereby they did not report it to be a factor for work-related injuries (15,16). Moreover, substance abuse by construction workers indicates that they are no effective supervisions at construction sites as showcased by lack of health and safety officers in construction sites.

The differences uncovered in the study may be due to the type of study designs employed since most studies did not use exploratory study but rather other types of study designs. A cross

sectional exploratory study is a research tool used to capture information based on data gathered for a specific point in time. This type of study design is mainly carried out in a very short time. Some results that might occur in the long run are missed (example few months after data collection procedure) and hence results may differ from others study designs that takes longer time (prospective cohort study design). There is no an overall study design but rather the selection of a study design in a research depends on uncommon outcome, uncommon exposure, ethics of assigning subjects to exposure and the available resources. Also, this study employed qualitative research but all other studies employed quantitative and hence this might suggest the differences encountered.

5.3 Available prevention strategies for work-related injuries in the construction industry

Different prevention strategies are employed in the construction industry in Dar es Salaam City. Provision of personal protective equipment among construction workers and provision of health and safety education were found to be similar with findings in previous studies (6,13). The personal protective equipment provided included boots, gloves, goggles and protective clothes and other prevention measures such as availability of first aid kit at construction sites to treat the injured. In these studies, provision of personal protective equipment and health education to construction workers were reported to be the available prevention strategies which were used to prevent injuries in the construction industry. This indicates that there are continuous provision prevention measures in the construction industry despite the shortage of capital resources (11,17).

Furthermore, peer to peer initiatives among construction workers seemed to save lots of lives and has influenced the decline in the magnitude of work-related injuries in the construction industry. Peer to peer initiatives includes watching each other's back. This is different from findings from other studies since it was not reported to be among the available prevention strategies employed in the construction industry. Other measures such as availability of safety aid kits in the construction industry were revealed to be different from different studies since they were not reported as the available prevention strategy used in the construction industry (14,17,24). Peer to peer initiatives may have been influenced by health and safety education provided to construction workers by the construction companies.

The differences uncovered might be different from other studies due to the following assumptions: The level of education and know how may be different from participants of one

study to another. Also, the level of experience between participants from one study to another might be different. Furthermore, the experience of principal researchers differs. Some studies might have been conducted by a more experienced researcher and others by a less experienced researcher and hence the differences encountered. Moreover, the duration of the study conducted may be different. Maybe some studies only took short and others took long periods of time in data collection.

5.4 Workers experiences on the available prevention strategies in the construction industry.

A study conducted in Costa Rica discovered that construction workers did not receive health and safety training in the past twelve months (20). This is similar to this study since it also reported by construction workers, that the available concern on the quality of the prevention measures offered is of low quality. Low quality also included health and safety training of low quality. On-provision of safety training of low-quality means that workers welfare is not cared for by construction companies.

Feeling on the decline of the magnitude of injuries and feeling of underestimated values on workers welfare were not reported in other studies and hence different (12,20,32). This is due to the fact that despite the prevention measures offered to be of low quality but they are still effective. A lack of strict laws makes construction companies not to care for construction workers health since they know they won't be punished. This may be seen in the current state, that foreign supervisors in the construction industry especially the Chinese and Indians do not adhere to the existing rules and laws. Furthermore, the lack of strict supervision might also be the reason behind construction workers feelings of underestimation on their welfare. If they could be optimal supervision, equipment needed could be provided at the required time and hence construction workers could not have any doubts on the quality of the available prevention strategies.

The differences uncovered might be different from other studies due to the following assumptions: The available rules and regulation in the construction industry might be different from one place to another. For example, not all sectors can give a researcher unlimited support. In some countries work, related researches are not easily undertaken while in other countries are easily undertaken. This might also imply country wise depending on the country's policy. The time which the study was conducted might have influenced participants to not mentions some factors involved. Furthermore, the types of questions asked from one study in relation to work-

related injuries might be different. For example, questionnaires' will not uncover more information than interviews. Moreover, the responses provided by respondents might be different from study to study. For example, responses of educated construction workers will somehow be different from uneducated construction workers. The analysis and interpretation of results might also be different from one researcher to another. This might occur in the form of researchers bias whereby a researcher already has an outcome in his/her head before analysis.

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATIONS

6.1 CONCLUSION

Work-related injuries in the construction industry are caused by both human factors (factors which are caused by construction workers such as carelessness) and non-human factors (factors which are not caused by construction workers such as lack of safety rules and policy). The mainly work-related injuries include cuts on different parts of the body. There are different measures employed in combating work related injuries but they are perceived to be of low quality. Despite being perceived to be of low quality they somehow reduce the rate of work-related injuries in construction industry.

Overall the study has revealed useful information to managers in the construction industry about factors for work-related injuries in the construction industry, available prevention strategies for work-related injuries in the construction industry and construction workers experiences on the available prevention strategies in Dar es Salaam City.

6.2 RECOMMENDATIONS

Based on the study findings, it is recommended that

1. The quality of prevention strategies employed in construction industries and sites should be improved.

REFERENCES

1. International Labour Organization. World of Work Report 2014:
2. Labour Report, Report of the Committee of Experts on the Application of Conventions and Recommendations. 2015
3. Health and Safety Executive. Health and safety statistics for the construction sector in Great Britain, 2017.
4. OSHA. Analysis of the Draft Policy on Occupational Safety and Health: Tanzanian Construction Industry. (July 2009).
5. National Audit Office. A Performance Audit Report on the Management of Occupational Health and Safety in Tanzania. 2013;(January):1–77.
6. ILO. Safety and health at work: A vision for sustainable prevention. International Labour Organization. 2014. 1-48 p.
7. Zubirah H. Workplace solutions and initiatives. 2015;
8. Ahrens M. Worker Casualties involving Wastewater , Sewers or Sewage Treatment Plants and Fire Incidents at Water or Sanitation Utilities. 2012;(June).
9. NBS. Tanzania Integrated Labour Force Survey 2014. 2015;
10. Tanzania R of. Employment and Earnings Survey 2012 Analytical Report. 2012;
11. Matiko JM, Work-related fatalities and severe injuries in the Dar-es-Salaam region , Tanzania : A comparison of risk factors between the construction and. 2015;21(3):4–11.
12. Vekinis D, Kielkowski D, Wilson K, Bello B, Rees D. Work-related fatalities in the South African construction industry : 2004 to 2006. 2010;
13. Hanna M, Seid TM, Lamessa D. Prevalence of occupational injuries and associated factors among construction workers in Addis Ababa, Ethiopia. J Public Heal Epidemiol. 2017;9(1):1–8.
14. Mwanaumo E, Thwala WD, Pretorius J. Assessing Health and Safety Requirements in Construction Contracts in Botswana. Econ Behav Stud. 2014;6(1):37–43.
15. Alinaitwe H, Mwakali JA, Hansson B. Analysis of Accidents on Building Construction Sites Reported in Uganda during 2001 - 2005. 2007;1208–21.

16. R.M.A Alazab. Work-related diseases and occupational injuries among workers in the. Afr Newslett Occup Heal Saf. 2004;14:37–42.
17. Nghitanwa EM, Lindiwe Z. Occupational accidents and injuries among workers in the construction industry of Windhoek, Namibia. Int J Heal. 2017;5(1):55.
18. Australia Safety, Work Health and Safety Perceptions: Construction Industry. 2015-2017
19. Phoya S. Health and Safety Risk Management in Building Sites in Tanzania: The Practice of Risk Assessment , Communication and Control. 2012;155.
20. Gimeno D, Felknor S, Burau KD, Delclos GL. Organisational and occupational risk factors associated with work related injuries among public hospital employees in Costa Rica. Occup Environ Med. 2005;62(5):337–43.
21. Seevaparsaid-mansingh K, Construction Accident Causation. 2007:465–82.
22. Jaffari, The causes and incidence of occupational accidents and ill-health across the globe. (April 2009).
23. Pouliakas K, Theodossiou I. An inquiry into the theory, causes and consequences of monitoring indicators of health and safety at work. 2010;(4734):2–38.
24. Kemei R, Kaluli J, Kabubo C. Assessment of Occupational Safety and Health in Construction Sites in Nairobi County, Kenya. KenCorps Eng Kenya Def Forces, Thika. 2014;1–13.
25. OSHA. Trenching and Excavation Safety. 2015.
26. Hosseinian SS, Torghabeh ZJ. Major Theories of Construction Accident Causation Models: a Literature Review. Int J Adv Eng Technol. 2012;4(2):2231–1963.
27. Generator RN, Global Health. April, 2014 1. 2014;(April):1–14.
28. Liu M, Wei W, Fergenbaum J, Comper P, Colantonio A. Work-related mild-moderate traumatic brain injury and the construction industry. 2018 Aug 3];39(3):283–90.
29. Liao CW, Perng YH. Data mining for occupational injuries in the Taiwan construction industry. Saf Sci. 2008;46(7):1091–102.
30. Massao G. Implementation of Health and Safety Management Strategy at Tanzania Cigarette Company Implementation of Health and Safety Management. 2015

31. OSH. Occupational Health and Safety. (November 2012):1–6.
32. Nghitanwa EM, Zungu L. Occupational Health and Safety Status in the Windhoek Construction Industry: A Namibian Perspective. *Open J Saf Sci Technol.* 2017;07(03):113–27.
33. Mrema EJ, Ngowi A V., Mamuya SHD. Status of Occupational Health and Safety and Related Challenges in Expanding Economy of Tanzania. *Ann Glob Heal.* 2015;81(4):538–47.
34. ILO, Work-related injuries and ill health statistics for the construction industry. 2017;
35. Major urban areas - population. *cia.gov.* [cited 2018 Jun 4]; (Visited on 14/4/2018)
36. Where is the fastest growing city in the world? *theguardian.com.* [cited 2018 Jun 4]; (Visited on 14/4/2018)
37. Hancock B. Trent Focus for Development in Primary Health Care An Introduction to Qualitative Research An Introduction to Qualitative. *Development.* 1998;319(7212):753.
38. Varkevisser C, Pathmanathan I, Brownlee a. Designing and conducting health systems research projects, Volume 2. 2003.
39. Graneheim UH, Lundman B. Qualitative content analysis in nursing research: Concepts, procedures and measures to achieve trustworthiness. *Nurse Educ Today.* 2004;24(2):105–12.
40. Hadi MA, José Closs S. Ensuring rigour and trustworthiness of qualitative research in clinical pharmacy. *Int J Clin Pharm.* 2016;38(3):641–6.
41. Schreier M. Qualitative {Content} {Analysis}. The {SAGE} {Handbook} of {Qualitative} {Data} {Analysis}. 2014;170–83.

APPENDICES

Appendix I: IN-DEPTH INTERVIEW GUIDE

Muhimbili University of Health and Allied Sciences



School of Public Health Social Sciences.

In-depth interview guide for available prevention strategies of work-related injuries in construction industry in Dar es salaam City.

BEFORE STARTING THE INTERVIEW:

- Salute all persons you meet in the interview venue (including those you don't need for the interview)
- Introduce yourself to the interviewee
- Explain the purpose of your visit
- Request for consent to carry the study (provide him/her with a copy of the consent form and read it for him/her)
- Allow time for questions/discussion on the consent and clarification
- If satisfied request him/her to sign the consent certificate and return it to you (only the certificate)
- Switch on the digital recorder
- Thank him/her and then begin the interview

Part I: The prevention strategies

- a) In your own words, please tell us the available prevention strategies for work related injuries in your company (*Probe on type of preventive strategy, preventive strategy coverage and how it operates in the company*)
- b) With the available prevention strategies, please tell us the magnitude of work-related injuries in your company (*Probe on whether the magnitude has increased, decreased, if it has increased what additional measures have you taken?*)
- c) Based on your experience in this company, what are the factors for work related injuries to construction workers? (*Probe according to the responses*)

- d) What is your comment on the available prevention strategies? (*Probe whether they are enough, not enough and reasons for those feelings, and what are the plans to ensure reduction of injuries in the future*)
- e) From our talk and the available prevention strategies and situation of work-related injuries in construction industry in the country basing on your, what is your advice to the government and other partners regarding prevention strategies of work-related injuries in construction industry in your company and other construction companies in the country at large?
- f) Thank you very much for the good responses to our questions, kindly we welcome you if you have any question/s or any concern that you would wish us to explain or address. (Give time for him/her to respond)
- g) Finally, we have come to the end of our interview, once again thank you very much for your time and support. After our initial analysis, we may feel that we had forgotten or we may need more details on some of the responses and thus we may need to contact you again. Kindly bear with us and accept our visit or call to you again. In the event as well, you may remember something that you want to share with us or seek clarification from us, we are willing to talk to you anytime and most welcome.

Part II: Identifications and socio-demographic profile of the informant:

- a) Name of the company _____Ownership of construction company_____
- b) Job title_____ Position _____
- c) Age _____ Sex _____
- d) Education level_____ Field of study _____
- e) Duration in current position _____
- f) What were you prior to this position? _____
- g) Duration of working in this company _____
- h) Working station prior to coming to this company _____

Thank you for your co-operation

Appendix II: MWONGOZO WA MAHOJIANO YA KINA
Muhimbili University of Health and Allied Sciences



School of Public Health Social Sciences.

Mwongozo wa mahojiano ya kina kwa mikakati iliyopo ya kuzuia majeraha yatokanayo nakazi katika sekta ya ujenzi katika jiji la Dar es Salaam.

KABLA YA KUENZIA MAZUNGUMZO:

- Salimia watu wote unaokutana nao katika eneo la mahojiano (ikiwa ni pamoja na wale ambao huna haja nao ya mahojiano)
- Jitambulisha kwa mhojiwa
- Eleza lengo la ziara yako
- Ombi la idhini ya kufanya utafiti (kumpa nakala ya fomu ya ridhaa na kumsomea)
- Ruhusu muda wa maswali / majadiliano juu ya ridhaa na ufafanuzi
- Ikiwa ameridhika muombe afanye ishara ya idhini na kurudi kwako (tu cheti)
- Washa rekoda ya digitali
- Mshukuru na kisha anza mahojiano

Sehemu ya I: Mikakati ya kuzuia

- a) Kwa maneno yako mwenyewe, tafadhali tuambie mikakati ya kuzuia majeraha yanayotokana na kazi katika kampuni yako (chunguza zaidi aina ya mikakati wa kuzuia, kavareji ya hiyo mikakati na jinsi inafanya kazi katika kampuni husika)
- b) Kwa mikakati iliyopo, tafadhali tuambie ukubwa wa majeruhi yanayohusiana na kazi katika kampuni yako (Tathmini kama ukubwa umeongezeka, umepungua, ikiwa imeongeza hatua gani za ziada zimechukuliwa?)

- c) Kulingana na uzoefu wako katika kampuni hii, ni nini sababu za majeraha yatokanayo na kazi kwa wafanyakazi wa ujenzi? (Chunguza zaidi kulingana na majibu)
- d) Nini maoni yako juu ya mikakati ya kuzuia majeraha iliyopo? (Angalia kama ni ya kutosha, haitoshi na sababu za hisia hizo, na ni mipango gani ya kuhakikisha kupunguza madhara kwa siku zijazo)
- e) Kutokana na majadiliano yetu kuhusu majeraha yatokanayo kazini katika sekta ya ujenzi nchini, ni nini ushauri wako kwa serikali na washirika wengine kuhusu mikakati ya kuzuia ya majeraha ya kazi katika sekta ya ujenzi katika kampuni yako na makampuni mengine ya ujenzi nchini kwa ujumla?
- f) Asante sana kwa majibu mazuri kwa maswali yetu, kwa hakika tunakukaribisha kama una swali / au masuala yoyote ambayo ungependa tufafanue au kushughulikia. (Mpe muda wa kujibu)
- g) Hatimaye, tumefika mwisho wa mahojiano yetu, mara nyingine tena asante sana kwa muda wako na msaada. Baada ya uchambuzi wetu wa awali, tunaweza kuhisi kuwa tumesahau au tutahitaji maelezo zaidi juu ya baadhi ya majibu na hivyo tunaweza kuhitaji kuwasiliana nawe tena. Tunaomba utuvumilie na kukubali ziara yetu au kuwaita tena. Katika tukio hilo pia, unaweza kukumbuka kitu ambacho unataka kushirikiana nasi au kutafuta ufafanuzi kutoka kwetu, tuko tayari kuzungumza na wewe wakati wowote.

Sehemu ya II: Utambulisho na maelezo ya kijamii na idadi ya watu ya habari:

- a) Jina la kampuni _____ Umiliki wa kampuni ya ujenzi _____
- b) Jina la kazi _____ Nafasi ya kazi _____
- c) Umri _____ Jinsia _____
- d) Ngazi ya elimu _____ Sehemu ya kujifunza _____
- e) Muda katika nafasi ya sasa _____
- f) Ulikuwa mahali gani kabla ya nafasi hii? _____
- g) Umefanya kazi na kampuni hii kwa muda gani? _____
- h) Kituo cha kazi kabla ya kuja kwa kampuni hii? _____

Asante kwa ushirikiano wako

Appendix III: FOCUS GROUP GUIDE
Muhimbili University of Health and Allied Sciences



School of Public Health Social Sciences.

Focus Group Discussion Guide: Factors, prevention strategies and construction workers experiences on prevention strategies of work-related injuries in construction industry

Completed Consent Form: Yes

*If consent is **not** obtained, thank them for their time and do not proceed.*

Demographic Form for Focus Group Discussions

Age:	
Sex:	
Highest Education Level:	
Training Institution:	
Company:	
Current Year of Study:	
Participant Code:	
Date:	
Interviewer Name	
Note taker:	

Introduction: *Work related injuries are the injuries which result from work. Construction industry is the leading industry in terms of work-related injuries which can either be fatal or non-fatal according to ILO. Therefore, in order to address work related injuries in construction industry we need to identify factors for, prevention strategies and your experiences in relation to work related injuries in construction industry. In TZ work related injuries are prevalent. Our focus in this study is on identifying factors for, prevention strategies and your experiences in relation to work related injuries in construction industry.*

We appreciate your participation in the study. Our study seeks to identify factors for, prevention strategies and your experiences in relation to work related injuries in construction industry in Dar es salaam City. We have selected you in the study because you work in construction industry and therefore, we feel your knowledge is valuable to our study. We believe that you will provide us with valuable information which will guide us in giving recommendations in managing the rate of work-related injuries in construction industry. By managing we mean reducing the number of injuries relating from construction works in the country. We would like to reiterate that your participation is voluntary and confidential. Please let me know if you would like to stop the interview at any time.

Opening Question: In Tanzania work related injuries are a public health problem. Different causes and solutions have been suggested by previous scholars. In other countries such as first world countries, work related injuries in construction industry are not a public health problem like in our country. What are your views? Please give us the reasons

A. Factors for work related injuries in construction industry

First, we'd like to discuss about the factors that increases the risks of a worker towards been injured in construction industry

1. What is your knowledge about factors for work related injuries in construction industry?
 - a. What do you understand about factors for work related injuries in construction industry? Please explanation
 - b. What are the factors for work related injuries in construction industry? Please list and explain
2. How does factors mentioned above prevent worker from producing the required output in construction industry? Please explain
 - a. How best can the challenges be addressed?
 - b. What are other recommendations which may be used to make improvements

B. Available prevention strategies

After having discussed on issues of factors for, we'd now like to discuss on the available prevention strategies in construction industry

3. Please answer the following questions
 - a. What are the available prevention strategy in construction industry? Please mention and explain
 - b. How does the available prevention strategy enable you to manage yourself from getting injured while doing work?
 - c. What challenges to you face from the available prevention strategies?
 - d. What are other recommendations which may be used to address the challenges and make improvements?
 - e. What are the lessons learnt regarding the available prevention strategies?

C. Experience of the available prevention strategies

After having discussed on issues of the available prevention strategies, we'd now like to discuss your experiences on the available preventive strategies in construction industry

4. What are your experiences to the available prevention strategy?
 - a. In your own words what can you tell us about the available prevention strategies?
 - b. What are the challenges of the available prevention strategies?
 - c. How best can the challenges be addressed?
 - d. What are other recommendations which may improve the work-related injuries in construction industry by focusing on different aspects discussed above?

Closing Question: After having discussed about different aspects related to work related injuries in construction industry in your company, what important messages do you want to tell us regarding factors for, available prevention strategies and your own experience on the available prevention strategies of work-related injuries in construction industry?

*Thank you for your participation. We look forward to sharing the results of our study with you. If you have any follow-up questions or concerns please contact **Mr. Oscar B Mwaibabile** phone number **0715298380***

For Focus Group Facilitator

Focus Group Information	
Training Institution:	Focus Group Code:
Date:	Number of participants:
Focus Group Discussion Facilitator:	Time started
	Time ended

Appendix IV: MWONGOZO WA MAJADILIANO YA KUNDI LA MTAZAMO
Muhimbili University of Health and Allied Sciences



School of Public Health Social Sciences

Mwongozo wa Majadiliano ya Kundi la Mtazamo: Sababu zinazo muweka mtu hatarini, mikakati ya kuzuia na uzoefu wa wafanyakazi wa ujenzi juu ya mikakati ya kuzuia majeraha kuhusiana na kazi katika sekta ya ujenzi

Fomu ya Hati ya Kukamilika: Ndiyo

Ikiwa ridhaa haipatikani, asante kwa wakati wao na usiendelee.

Fomu ya idadi ya watu kwa mazungumzo ya kikundi cha Mtazamo

Umri:	
Jinsia:	
Ngazi ya Elimu ya Juu:	
Taasisi ya Mafunzo:	
Kampuni:	
Mwaka wa Sasa wa Utafiti:	
Kanuni ya Washiriki:	
Tarehe:	
Jina la Mhojiwaji	
Muandikaji kumbukumbu:	

Utangulizi: Majeruhi yanayohusiana na kazi ni majeraha yanayotokana na kazi husika. Sekta ya ujenzi ni sekta inayoongoza kuhusiana na majeruhi yanayohusiana na kazi ambayo yanaweza kuwa kawaida au yanayoweza kusababisha kifo, hii ni kulingana na ILO. Kwa hiyo, ili kukabiliana na majeruhi yanayohusiana na kazi katika sekta ya ujenzi tunahitaji kutambua sababu zinazomuweka mtu hatarini kupata majeraha, mikakati ya kuzuia na uzoefu wako kuhusiana na majeruhi ya kazi katika sekta ya ujenzi. Katika majeraha ya kazi ya TZ yameenea. Lengo letu katika utafiti huu ni juu ya kutambua sababu zinazomuweka mtu hatarini kupata jeraha, mikakati ya kuzuia na uzoefu wako kuhusiana na majeruhi ya kazi katika sekta ya ujenzi.

Tunathamini ushiriki wako katika utafiti. Utafiti wetu unatafuta kutambua sababu, mikakati ya kuzuia na uzoefu wako kuhusiana na majeruhi ya kazi katika sekta ya ujenzi jijini Dar es Salaam. Tumekuchagua katika utafiti kwa sababu unafanya kazi katika sekta ya ujenzi na kwa hiyo tunajisikia ujuzi wako ni muhimu kwa masomo yetu. Tunaamini kwamba utatupa taarifa muhimu ambayo itatuongoza katika kutoa mapendekezo katika kusimamia kiwango cha majeraha kuhusiana na kazi katika sekta ya ujenzi. Kwa kusimamia tunamaanisha kupunguza idadi ya majeruhi yanayohusiana na kazi za ujenzi nchini. Tungependa kurudia kwamba ushiriki wako ni wa hiari na wa siri. Tafadhali napenda kujua kama ungependa kuacha mahojiano wakati wowote.

Swali la Ufunguzi: Majeruhi yatokanayo na kazi Tanzania ni shida ya afya ya umma. Sababu tofauti na ufumbuzi umependekezwa na wasomi wa zamani. Katika nchi nyingine kama nchi za kwanza za dunia, majeruhi ya kazi katika sekta ya ujenzi si tatizo la afya ya umma kama katika nchi yetu. Maoni yako ni nini? Tafadhali tupe sababu

A. Sababu zinazoweza kumuweka mtu hatarini kupata majeraha kazini katika sekta ya ujenzi

Kwanza, tungependa kujadili juu ya mambo ambayo huongeza hatari za mfanyakazi kuelekea kujeruhiwa katika sekta ya ujenzi

1. Je, nini ujuzi wako juu ya mambo ya majeraha kuhusiana na kazi katika sekta ya ujenzi?

- a) Unaelewa nini kuhusu sababu zinazoweza kumuweka mtu hatarini kupata majeraha katika kazi katika sekta ya ujenzi? Tafadhali toa maelezo
- b) Je! Ni sababu gani zinazomuweka mtu hatarini kupata majeraha katika kazi za sekta ya ujenzi? Tafadhali eleza

2. Katika sababu zilivyotajwa hapo juu, zinamzuiaje mfanyakazi kuzalisha pato linalohitajika katika sekta ya ujenzi? Tafadhali chaza

- a) Changamotozinazotokanahapojuzinawezajekushughulikiwavizurizaidi?
- b) Ni mapendekezo gani ambayo yanaweza kutumiwa kuboresha?

B. Mikakati ya kuzuia majeraha kazini iliyopo katika sekta ya ujenzi

Baada ya kujadili juu ya masuala na sababu zinazoweza kumuweka mtu hatarini kupata majeraha kazini katika sekta ya ujenzi, tunataka sasa kujadili mikakati ya kuzuia majeraha kazini iliyopo katika sekta ya ujenzi

3. Tafadhali jibu maswali ya fuatayo

- a) Ni mikakati gani ya kuzuia majeraha kazini inapatikana katika sekta ya ujenzi? Tafadhali taja na elezea
- b) Mikakati iliyopo inakuwezesha kujikinga na majeraha kazini katika sekta za ujenzi ukiwa kazini?
- c) Je! Ni changamoto gani mnazopata kutokana na mikakati ya kuzuia majeraha kazini iliyopo?
- d) Ni mapendekezo gani ambayo yanaweza kutumiwa kushughulikia changamoto zilizopo na kufanyiwa maboresho?
- e) Je, unajifunza nini kuhusu mikakati iliyopo ya kuzuia majeraha kazini?

C. Uzoefu wa mikakati ya kuzuia inapatikana

Baada ya kujadili juu ya masuala ya mikakati ya kuzuia majeraha kazini iliyopo, sasa tunataka kujadili uzoefu wako juu ya mikakati ya kuzuia maeraha iliyopo katika sekta ya ujenzi

4. Nini uzoefu wako kwa mikakati ya kuzuia majeraha kazini iliyopo?

- a) Kwa maneno yako mwenyewe unaweza kutuambia nini kuhusu mikakati ya kuzuia majeraha kazini iliyopo?
- b) Je! Ni changamoto gani mnazokutana naza mikakati ya kuzuia majeraha iliyopo?
- c) Je! Ni kwa namna gani hizo changamoto zinaweza kushughulikiwa vizuri zaidi?
- d) Ni mapendekezo gani ambayo yanaweza kufanywa ili kupunguza majeraha yanayohusiana na kazi katika sekta ya ujenzi kwa kuzingatia masuala mbalimbali yaliyojadiliwa hapo juu?

Swali la Kufunga: Baada ya kujadiliana kuhusu masuala mbalimbali kuhusiana na majeruhi ya kazi katika sekta ya ujenzi katika kampuni unayofanya kazi, ni ujumbe gani muhimu unatuambia kuhusu sababu zinazoweza kumuweka mtu hatarini kupata majeraha kazini katika sekta ya ujenzi, mikakati ya kuzuia majeraha iliyopo na uzoefu wako mwenyewe juu ya mikakati ya kuzuia majeraha iliyopo inayohusiana na kazi katika sekta ya ujenzi?

Asante kwa ushiriki wako. Tunatarajia kugawana matokeo ya utafiti wetu na wewe. Ukiwa una maswali yoyote ya kufuatilia au wasiwasi tafadhali wasiliana na

Bw. Oscar B Mwaibabile simu namba 0715298380

Kwa Msimamizi Mkuu wa Kikundi cha Mtazamo

Taarifa za Kikundi Cha Mtazamo	
Taasisi ya Mafunzo:	Kanuni ya Kikundi cha Mtazamo:
Tarehe:	Idadi ya washiriki:
Msimamizi wa Kikundi cha Mtazamo:	Muda wa Kuanza:
	Muda wa kumaliza:

Appendix V - CONSENT TO PARTICIPATE IN RESEARCH – ENGLISH VERSION.

Muhimbili University of Health and Allied Sciences



School of Public Health Social Sciences.

A research on Work related injuries in construction industry in Dar es Salaam; a qualitative study of factors and prevention strategies

Dear sir/madam

You are hereby invited to participate in a study conducted by Oscar B Mwaibabile for a Masters Dissertation at Muhimbili University of Health and Allied Sciences.

Your participation in this study is entirely voluntary. You should read the information below before deciding whether or not to participate in the study. Your participation in the study will involve participation to identify factors, prevention strategies and your experiences in relation to work related injuries in construction industry.

PURPOSE OF THE STUDY: The purpose of this study is to identify factors, explore prevention strategies and analyze workers experiences on the available prevention strategies of work-related injuries in construction industry in Dar es Salaam city.

VOLUNTARY PARTICIPATION: Participation in this study is voluntary and you have a right to refuse to consent. If you consent to participate, you and the child have the right to withdraw from the study at any time if you wish to do so.

BENEFITS: There are no direct benefits for participating in the study. However, this study will provide information on factors, prevention strategies workers experiences on the available prevention strategies of work related injuries in construction industry. This information will be useful to government and non-government actors to improve interventions.

RISKS AND DISCOMFORT: There are no risks or discomforts involved in this study.

COMPENSATION FOR TIME: You will not receive any payment or other compensation for participation in this study. There is also no cost to you to participate in the study except your time.

CONFIDENTIALITY: Your participation in this study will remain confidential and your identity will be disclosed. There will be no any link between your identity and response.

REVIEW AND APPROVAL: The review and approval of the study has been done by the Ethical committee of Muhimbili University of Health and Allied Sciences (MUHAS).

RESULTS: The results of the study will be made available to you through a planned means of research dissemination and will be compiled in a research paper for publication as part of a partial fulfillment of a master's degree.

CONSENT FORM: I confirm that I have read carefully, understood the information provided and consent to participate in the study.

CONTACT: If you ever have questions about this study, you should contact the Principal Investigator Oscar B Mwaibabile from Muhimbili University of Health and Allied Sciences, P.O. Box 65001, Dar-es-Salaam.

I, have read the contents of this consent form and my questions have been adequately answered. I therefore agree to participate in this study.

Signature of the participant Date2018

Signature of the interviewer Date2018

**Appendix VI - RIDHAA YA KUSHIRIKI KWENYE UTAFITI - KISWAHILI
VERSION
Muhimbili University of Health and Allied Sciences**



School of Public Health Social Sciences

Utafiti kuhusu Majeraha kuhusiana na kazi katika sekta ya ujenzi huko Dar es Salaam; utafiti wa ubora wa mambo na mikakati ya kuzuia.

Mpendwa mshikiri:

Nakukaribisha kushiriki katika utafiti unaofanya na Bw. Oscar B Mwaibabile, mwanafunzi wa stahada ya pili kutoka chuo kikuu cha afya na sayansi shirikishi Muhimbili.

Kushiriki kwako katika utafiti huu ni kwa hiari unatakiwa kusoma taarifa zote katika fomu hii na kuaamua kushiriki au kuto kushiriki katika utafiti huu.

MADHUMUNI YA UTAFITI: Dhumuni la utafiti huu kutathimini majeraha kuhusiana na kazi katika sekta ya ujenzi kwa kuangalia mambo yanayoweza kumuweka mtu kwenye hatari ya kupata majeraha, mikakati ya kuzuia na uzoefu wa wafanya kazi kuhusu mikakati iliyopo ya kuzuia majeraha katika jiji la Dar es salaam

USHIRIKI: Ushiriki katika utafiti huu ni wa hiari na una haki ya kukataa kushiriki katika utafiti. Kama umekubali kushiriki utatakiwa kuweka sahihi yako katika fomu hii na kujibu maswali utakayo kuwa unaulizwa na msahili.

FAIDA: Hamna faida ya moja kwa moja kwa wewe kushiriki katika utafiti huu. Ila matokeo ya utafiti huu yatasaidia kutathimini majeraha kuhusiana na kazi katika sekta ya ujenzi kwa kujua mambo yanayoweza kumuweka mtu kwenye hatari ya kupata majeraha, mikakati ya kuzuia na uzoefu wa wafanyakazi kuhusu mikakati ya kuzuia majeraha kwa watu wanaofanya kazi kwenye ujenzi. Taarifa hizi zitasaidia serikali na wadau wengine kuboresha shughuli za kuimarisha na kupunguza majeraha yanayotokana kuhusina na kazi za ujenzi nchi.

HASARA: Hakuna hasara za moja kwa moja zitakazotokana na utafiti huu.

FIDIA: Hakutakuwa na malipo yoyote kutokana na ushiriki wa utafiti huu na pia kama mshiriki hutakuwa na gharama zozote za wewe kushiriki katika utafiti huu isipokuwa muda wako tu.

USIRI: Ushiriki wako katika tafiti hii utabaki kuwa siri na taarifa zote zitakazokusanywa zitashughulikiwa kwa usiri wa hali ya juu. Jina lako halitatumika katika taarifa zozote.

KUIDHINISHA UTAFITI: Mapitio na uidhishaji wa utafiti huu umefanywa na kamati ya maadili ya utafiti wa chuo kikuu cha afya na sayansi shirikishi Muhimbili.

MATOKEO: Matokeo ya utafiti huu yatapatikana kupitia uwasilishwaji katika chuo kikuu cha afya na ayansi shirikishi Muhimbili, na wadau, pia ripoti ya utafiti itawekwa kwa umma (publish) ili iweze kusaidia kutekeleza shughuli za lishe na tafiti zingine

FOMU YA UTAFITI: Nakiri kwamba nimesoma maelezo yote kwa umakini na nimeelewa kila kilichoandikwa katika fomu hii. Ninaelewa kwamba ninaweza kujitoa muda wowote nitakaotaka kujitoa katika tafiti hi.

MAWASILIANO KUHUSIANA NA UTAFITI HUU

Kama una maswali kuhusiana na utafiti huu unaweza kuwasiliana na mtafiti mkuu, Oscar B Mwaibabile kutoka chuo kikuu cha afya na sayansi shirikishi cha Muhimbili, S.L.P 65001, Dar es Salaam.

Mimi, Nimesoma maelezo yote katika fomu hii na maswali yangu

Yameweza kujibiwa. Nakubali kushiriki katika utafiti huu.

Sahihi ya Mshiriki..... Tarehe2018

Sahihi ya Msahili Tarehe2018

Appendix 7: ETHICAL CLEARANCE LETTER

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES OFFICE OF THE DIRECTOR OF POSTGRADUATE STUDIES

P.O. Box 65001
DAR ES SALAAM
TANZANIA
Web: www.muhas.ac.tz



Tel G/Line: +255-22-2150302/6 Ext. 1015
Direct Line: +255-22-2151378
Telefax: +255-22-2150465
E-mail: dpgs@muhas.ac.tz

Ref. No. DA.287/298/01A/

30th August, 2018

Mr. Oscar Benford
Master of Public Health
MUHAS.

**RE: APPROVAL OF ETHICAL CLEARANCE FOR A STUDY TITLED:
"ASSESSMENT ON FACTORS OF WORK RELATED INJURIES AMONG
WORKERS AND PREVENTION STRATEGIES IN CONSTRUCTION
INDUSTRY IN DAR ES SALAAM CITY"**

Reference is made to the above heading.

I am pleased to inform you that, the Chairman has, on behalf of the Senate, approved ethical clearance for the above-mentioned study. Hence you may proceed with the planned study.

The ethical clearance is valid for one year only, from 29th August, 2018 to 28th August 2019. In case you do not complete data analysis and dissertation report writing by 28th August, 2019, you will have to apply for renewal of ethical clearance prior to the expiry date.

Dr. Emmanuel Balandya
ACTING: DIRECTOR OF POSTGRADUATE STUDIES

cc: Director of Research and Publications
cc: Dean, School of Medicine

Appendix 8: INTRODUCTION LETTER TO MASASI CONSTRUCTION CO. LTD

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES OFFICE OF THE DIRECTOR OF POSTGRADUATE STUDIES

P.O. Box 65001
DAR ES SALAAM
TANZANIA
Web: www.muhas.ac.tz



Tel G/Line: +255-22-2150302/6 Ext. 1015
Direct Line: +255-22-2151378
Telefax: +255-22-2150465
E-mail: dpgs@muhas.ac.tz

Ref. No. HD/MUH/T.407/2017

3rd September, 2018

Masasi Construction Co. Ltd
Plot No. 25, Uhuru Street Mnazi Mmoja
P.O. Box 9580
DAR ES SALAAM.

Re: INTRODUCTION LETTER

The bearer of this letter Mr. Oscar Benford Mwaibabile is a student at Muhimbili University of Health and Allied Sciences (MUHAS) pursuing Master of Public Health.

As part of his studies he intends to do a study titled: "*Assessment on factors of work related injuries among workers and prevention strategies in construction industry in Dar es Salaam City*".

The research has been approved by the Chairman of University Senate.

Kindly provide him the necessary assistance to facilitate the conduct of his research.

We thank you for your cooperation.


Ms. S. Kamby

For: DIRECTOR, POSTGRADUATE STUDIES

cc: Dean, School of Public Health and Social Sciences
cc: Mr. Oscar Benford Mwaibabile

Appendix 9: INTRODUCTION LETTER TO IMPERIAL CONSTRUCTION COMPANY

**MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
OFFICE OF THE DIRECTOR OF POSTGRADUATE STUDIES**

P.O. Box 65001
DAR ES SALAAM
TANZANIA
Web: www.muhas.ac.tz



Tel G/Line: +255-22-2150302/6 Ext. 1015
Direct Line: +255-22-2151378
Telefax: +255-22-2150465
E-mail: dpgs@muhas.ac.tz

Ref. No. HD/MUH/T.407/2017

3rd September, 2018

Imperial Construction Engineer
DARES SALAAM,

Re: INTRODUCTION LETTER

The bearer of this letter Mr. Oscar Benford Mwaibabile is a student at Muhimbili University of Health and Allied Sciences (MUHAS) pursuing Master of Public Health.

As part of his studies he intends to do a study titled: "*Assessment on factors of work related injuries among workers and prevention strategies in construction industry in Dar es Salaam City*".

The research has been approved by the Chairman of University Senate.

Kindly provide him the necessary assistance to facilitate the conduct of his research.

We thank you for your cooperation.


Ms. S. Kamby
For: **DIRECTOR, POSTGRADUATE STUDIES**

cc: Dean, School of Public Health and Social Sciences
cc: Mr. Oscar Benford Mwaibabile

Appendix 10: INTRODUCTION LETTER TO CRJE EAST AFRICA LIMITED

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES OFFICE OF THE DIRECTOR OF POSTGRADUATE STUDIES

P.O. Box 65001
DAR ES SALAAM
TANZANIA
Web: www.muhas.ac.tz



Tel G/Line: +255-22-2150302/6 Ext. 1015
Direct Line: +255-22-2151378
Telefax: +255-22-2150465
E-mail: dps@muhas.ac.tz

Ref. No. HD/MUH/T.407/2017

3rd September, 2018

CRJE (EAST AFRICA) LIMITED
Estim: Construction Co. Ltd P.O. BOX 77198
Fire Road CRJeshi 20066@gmail.com
DAR ES SALAAM.

Re: INTRODUCTION LETTER

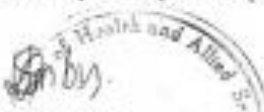
The bearer of this letter Mr. Oscar Benford Mwaibubile is a student at Muhimbili University of Health and Allied Sciences (MUHAS) pursuing Master of Public Health.

As part of his studies he intends to do a study titled: "*Assessment on factors of work related injuries among workers and prevention strategies in construction industry in Dar es Salaam City*".

The research has been approved by the Chairman of University Senate.

Kindly provide him the necessary assistance to facilitate the conduct of his research.

We thank you for your cooperation.


Ms. S. Kamby
For: DIRECTOR, POSTGRADUATE STUDIES

cc: Dean, School of Public Health and Social Sciences
cc: Mr. Oscar Benford Mwaibubile