Original Research Article

Risk Factors Associated With Occupational Injuries Among Motor Vehicle Repair Workers; A case study of Kigandaini Juakali Sector Thika, Kenya.

ABSTRACT

Aim: The study aimed to determine the associated factors for occupational injuries at Kigandaini Juakali sector, Thika town, Kenya

Method: An occupational injury refers to a physical injury that a worker encounters while working, they include body cuts, burns body punctures, and body abrasions. An analytical cross-sectional study design was applied. A stratified random sampling method was applied to recruit 260 respondents. Both qualitative and quantitative techniques of data collection were applied, whereby a semi-structured questionnaire, KII, and FGDs were used to collect data. To enhance data quality, Cronbach's alpha was applied for quantitative data while word cloud was used for qualitative data. Chi-square and logistic regression were applied to determine the degree of association between occupational injuries and associated risk factors.

Results: The annual prevalence rate of work-related injuries was (43.5%) and (39.8%) for the past two weeks. Body cuts at 78.8% were the most reported injuries. PPEs in suitable working condition (OR=39, 95%CI=12.73-119.66), whether PPEs were worn properly (OR=59, 95%CI=16.94-209.84), provision of occupational health and safety information (OR=2.5, 95%CI=1.23-5.28), Use of PPEs (OR=8.1, 95%CI=0.037-0.42), presence of safety information boards(OR=3, 95%CI=1.08-8.08) reduced the odds of work-related injuries while poor working condition (OR=2.5, 95%CI=0.19-0.85) increased the odds of having a work-related injury.

Conclusion: The study reported a high prevalence of occupational injuries among motor vehicle repair workers. Poor working conditions increased the odds of having an occupational injury while the provision of occupational safety information, presence of safety boards, proper wearing of protective gears, use of full protective gears, use of protective gears in good working condition, and good perception on mandatory use PPEs reduced the odds of having an occupational injury. There is need to safeguard the necessary safety measure which will result to a safer working environment.

Keywords*: Occupational injuries, Juakali, motor vehicle repair workers, risk factors*.

1. INTRODUCTION

Occupational injury refers to a physical injury that a worker encounters while working(1). Job-related injuries and work-related injuries are equal to occupational injuries. Work-related injuries are commonly accompanied by body harm such as cuts, fractures, or limbs confiscation(1). According to global estimates of work-related injuries and work-related illnesses, internationally there were 313 million work-related injuries thus revealing how job-related injuries are becoming a public health problem of concern (2). World record shows that 250 million job-related accidents and 160 million work-related diseases occurred in 2012(3). The rationale for soaring injury rates isn't well known but may entail the failure to acknowledge workplace hazards, inadequate job experience or sufficient training, lifestyle factors, mental and physical development factors, and the inability to communicate efficiently with their administrators(4) . Developing countries are highly affected by work-related accidents and illnesses. In emerging nations, the risk of having a work-related injury is 10 to 20 times higher than in industrialized nations(5). Work-related injuries are consequences of complex multiple risk factors; this entails social-demographic characteristics of workers,environmental and social behavior factors of employees(6). Injuries related to insufficient well-being and health values are manifested in the majority of informal settings. Injuries at the workplace, are one of the most preventable and modifiable job-related safety and health issues. Unfavorable work

settings, including flawed premises with inadequate welfare facilities, and practically nonexistent occupational health services, are causing significant human and material losses(7).
In Kenya, the Juakali segment is unfavorably affected by inadequate access and observance to health and safety regulations; this is because the occupational safety and health Act Cap 15 does not cover this segment. Yet this is a segment where workers are exposed to all kinds of occupational hazards and other forms of work-related accidents originating from the nature of their, equipment, and materials used, mainly without any shielding procedures(8). The interface between workplace hazards and injuries moreover unhealthy working premises intensifies informal sector workers' health(5). Informal sectors workers carry out their duties in undesirable living and working premises which puts them at risk of job-related diseases and injuries. Kenya has experienced a drastic rise in the informal sector, commonly known as Juakali, which has been playing a momentous role in job creation (9). Despite the existence of work-related safety and health measures, In Kenya, there were 6796 occupational accidents in the year 2015(10). There is limited information concerning the present status of occupation injury and underlying factors and how these factors affect the safety and welfare of workers. Therefore, the study aimed to determine the prevalence and the associated social demographic, work environment, and work behavioral factors for work-related injuries among motor vehicle repair workers in the Kigandaini Juakali sector Thika, Kenya.

2. METHODOLOGY

2.1Study design

An analytical cross-sectional study design was used, it helped quantify an association between associated risk factors and occupational injuries. The research design gave a snapshot of the burden of occupational injuries. The research design applied both qualitative and quantitative methods of data collection, this was important for triangulation purposes.

2.2 Study area

This study was carried out at Kigandaini Juakali sector located in Thika town which has been recognized as a center for industries in Kenya. Large-scale enterprises and small-scale industries comprising informal sectors exist within the town (11). The cluster is an employment zone made up of informal sector manufacturing enterprises, car repair, and other small retail enterprises.

2.3 Study population

All motor vehicle repair workers at Kigandaini Juakali sector and who were members of the Thika Juakali welfare association were the source of the sampling frame. The study population for this study was employed or self-employed or own-account workers. They were engaged in different activities, namely; general mechanical, welding, panel beating, spray painting, and wiring.

2.4 Sample size determination

A sample size of 260 respondents was obtained by using a finite method of Fischer formula. For qualitative data, Three KIIS were conducted and five FDGs comprising of the five motor vehicle repair workers categories.

2.5 Sampling design and sample size

A stratified sampling method was applied to generate the study participants. The sample in each cluster was proportionally obtained from each stratum of motor vehicle repair activities. Simple random sampling was applied to select respondents from each stratum.

2.6 Data collection methods and instruments

Both qualitative and quantitative data collection techniques were used whereby semi-structured research administered questionnaires were used. The questionnaire covered the social demographic

characteristics, presence of a work-related injury in the last year and two weeks, part of the body affected by the injury, type of injury, source of the injury, and the reason for the injury to occur, behavioral risk factors and finally the work-environmental factors. A key informant guide and FGD guide were used to collect the qualitative data.

2.7 Testing for validity and reliability

A pilot study was done at vehicle repair firms in Ziwani, whereby ten percent of the sample, that is, about 29 participants were considered. Internal consistency was measured through the coefficient alpha, Data was entered into SPSS version 26 to check for reliability. The results were 0.79 meaning the tools were reliable. To enhance accuracy of tools, interview questionnaires were pretested by an occupational health and safety expert.

2.8 Data processing and analysis

Quantitative Data collected was keyed into excel, cleaned, cross-checked, and finally imported to SPSS version 26 for analysis. Categorical variables were described by frequency and percentage. Bivariate analysis was applied to assess for a relationship between the dependent and independent variables. The association was statistically significant between the variables if the p-value was ≤ 0.05. Binary logistic regression was applied for factors found to be significant in bivariate analysis. Analyzed data was presented using both charts and tables. For qualitative data, data recorded in the audio was transcribed. Differences and similarities were highlighted in the text and then imported into NVivo software. Data was coded based on themes, whereby the main objective was coded as the parent code while variables under each objective as child codes. Finally, triangulation with quantitative data was conducted

3. RESULTS

3.1 Prevalence and Characteristics of Occupational Injuries

As indicated in the table below, The annual prevalence of occupational injuries was (43.5%), while the prevalence of occupational injuries in the last two weeks was (39.8%). Body cuts (78.8%) were the most reported occupational injuries followed by body abrasions (32.7%) among study participants.

Table 1. prevalence and characteristics of occupational injuries

Variables	Categories	Frequency	Valid percentages %
Have you ever had an occupational injury in the last year?	yes	113	43.5
	no	147	56.5
Have you ever had an occupational injury in the last two weeks?	yes	45	39.8
	no	68	60.2
Have you ever sustained Burns?	yes	17	15
	no	96	85
Have ever sustained	yes	37	32.7

Body abrasions?	no	76	67.3
Have you ever sustained a Body puncture?	yes	31	27.4
	no	82	72.6
Have you ever sustained Body cuts?	yes	89	78.8
	no	24	21.2

3.2 Social-Demographic Characteristics among respondents

As indicated in the table below, The majority(97.7%) of the respondents in this study were males. Close to a half (46.2%) of the respondents were aged between 19-28 years. Study findings revealed (47.3%) had attained the secondary level of education. Close to half (46.2%) of the respondents had 1-5 years of work experience. The majority(80.2%) of the respondents were on a temporal term of employment. More than half (57.3%) of the participants reported earnings ranging between 4500-14500ksh.

Table 2: Frequency Distribution Table on occupational injuries and Social demographic factors linked to work-related injuries

Independent Variables	Category	Frequency	Valid Percentage (%)
What is your Age?	19-28	120	46.2
	29-38	111	42.7
	39-48	29	11.2
What is your Gender?	Male	254	97.7
	Female	6	2.3
What is your Term of employment?	Temporary	210	80.2
	contractual	50	19.2
What is your level of education?	Primary school	60	23.1
	Secondary school	123	47.3
	Vocational school	70	26.9
	University	7	2.7
How many years of work	< one year	34	13.1

experience do you have?	1-5 years	120	46.2
	5-10 years	54	20.8
	Over ten years	52	20.0
What is your monthly Income?	4500-14500	149	57.3
	14600-24600	67	25.8
	24700-34700	43	16.5
	≥35000	1	0.4

3.3 Socio-demographic Factors linked with Occupational Injuries

In social demographic factors, none of the variables had a significant relationship occupational injuries; Age(X^2*=1.985, df=2, P=.37*), gender (X^2*=0.107, df=1, P*=1.00*), Level of education (X^2*=6.134, df=3, P*=.10*), term of employment (X^2*=0.054, df=1, P=.82*), years of working experience (X^2*=4.001, df=3, P=.26*) and level of income (X^2*=3.444, df=3, P=.29*). This means injuries sustained were independent of the social demographic characteristics.

Table 3: Chi-square tables on Socio-demographic Factors linked with Occupational Injuries.

Independent variable	**Categories**	**Dependent variable (Occupational injuries)**		**Statistical significance (X^2-Test of independence)**
		YES (N=113)	**NO (N=147)**	
What is your Age?	19-28	47(39.2%)	73(60.8%)	X^2=1.985
	29-38	51(45.9%)	60(54.1%)	df=2
	39-48	15(51.7%)	14(48.3%)	P=0.37
What is your Gender?	male	110(43.3%)	144(56.7%)	X^2=0.107
	female	3(50%)	3(50%)	df=1
				P*=1.00
What is your Term of employment?	temporarily	92(43.8%)	118(56.2%)	X^2=0.054
	contractual	21(42%)	29(58%)	df=1
				P=0.82

What is your level of education?	primary	22(36.7%)	38(63.3%)	X^2=6.134 df=3 P*=0.10
	secondary	53(43.1%)	70(56.9%)	
	vocational	32(45.7%)	38(54.3%)	
	university	6(85.7%)	1(14.3%)	
How many years of work experience do you have?	<one year	11(32.4%)	23(67.6%)	X2=4.001 df=3 P=0.26
	1-5years	57(47.5%)	63(52.5%)	
	5-10 years	26(48.1%)	28(51.9%)	
	> ten years	19(36.5%)	33(63.5%)	
What is your Income level?	4500-14500	61(40.9%)	88(59.1%)	X^2=3.444 df=3 P=0.29
	14600-24600	28(41.8%)	39(58.2%)	
	24700-34700	23(53.5%)	20(46.5%)	
	≥35000	1(100%)	0(0%)	

3.4 Work Environment Characteristics among Respondents

Close to three quarters (73.8%) of the study participants reported having never been supervised, more than half of the respondents(56.2%) reported working for more than eight hours a day. More than half of the respondents (52.3%) reported having never been trained in health and safety training. Only (70.8%)of the respondents reported having been provided with occupational safety information. The majority(70%) of the respondent reported working in poor working conditions. More than half of the study respondents (58.5%) reported working in a crowded work environment. The majority of (84.6%) of the respondents reported absences of safety information boards. Close to three quarters (71.9%)of the respondents reported the presence of warning signs at their workstations .lasty, majority of the respondents (86.5%) reported absences of first aid equipment.

3.5 Work Environment Factors associated with Occupational Injuries

As indicated in the table below, The following variables revealed a significant relationship with occupational injuries when the bivariate analysis was done; provision of occupational health and safety training (X^2 =12.109, *df* =1, *P*<.001), number of hours spent in work in a day(X^2 =15.100, *df* =3, *P** <.001), presence of crowded work environments (X^2 =9.187, *df* =1, *P*<.002), presence of poor working conditions (X^2 =21.288, *df* =1, *P*<.001), the provision of warning signs (X^2 =10.659, *df* =1, *P*<.001), provision of safety information boards(X^2 =8.453, *df* =1, *P*<.004), occupational health and safety supervision(X^2 =5.930, *df* =1, *P* =.02) and provision occupational health and safety information (X^2 =19.445, *df* =1, *P*<.001). However, the provision of first aid equipment (X^2=*3.649, df=1, P=.06*) didn't have a significant association with occupational injuries.

Significant variables in work environmental factors were then modeled in the logistic regression. From this study, Workers who spent more than 8 hours daily in the workplace were two times more likely to sustain occupational injuries than those who spent 4-to 8 hours in their work. The majority of the respondents

narrated that long working hours increased the vulnerability to occupational injuries. For instance, one of the discussants in the welders FGD noted that:

"…*There is something we call brakes, when I get to my work at 7 am, I get out at 6 pm, even I lack time to have my food, hope you get my point, now us lacking that time to make our brains relax, you just brainless, you find you just fixed by the work, you get fixed today, tomorrow, because of this work in the fifth day there is a high chance you will make a mistake and getting an injury…*"(Respondent 1, Welding FGD).

Besides, the provision of occupational health and safety information reduced the odds of sustaining the injuries by 2.5. The majority of the discussant in the FGD, employers in the KII noted that inadequate provision of occupational health and safety information played a big role in whether an employee sustained an occupational injury. One of the discussants in the general mechanic FGD narrated that:

"*…we are not provided with adequate occupational safety information, for instance, when doing these jobs, there are procedures to follow, to prevent harming yourself, let's say like when lifting a vehicle using a jack, the ground should be stable and not slippery, but we don't have that knowledge to remind us, Soo, we just assume, in the process some of us have had injures as a result…*" (Respondent 1, Mechanics FGD).

The presence of poor working conditions increased the odds by 2.5. The majority of the discussants in the FGD noted poor working conditions had a role in sustaining occupational injuries. One of the discussants in the panel beating FGD narrated that:

"…Now there are these, windows, vehicle windscreens which have been removed and dumped here carelessly now the shoes we wear are not strong and sometimes we lay down to repair vehicles underneath. so we tend to get cuts and even deep cuts. Sometimes when it rains there is a lot of mud here …" (Respondent 3, panel beaters FGD).

Lastly, the presence of health and safety information boards in the working section reduced the odds of sustaining Occupational injuries by 3. The majority of the discussants in the various FGD noted that insufficient and lack of safety information boards had a significant role in whether workers sustained an occupational injury. One of the discussants in welders FGD noted that:

"…let's say it has been written don't close there, you will not close hahaha but they are not provided here, let's say if am repairing a lorry on top and there is a signboard written welding operations is on progress, even a customer will not that place is an X, unfortunately, they are not provided, lack of that reminder it causes a lot of negligence or carelessness at work…" (Respondent 1, Welders FGD).

Table 4: Bivariate and Multivariate logistic regression table on work-environment factors associated with occupational injuries

Independent variables	**Chi-square test for independence**	**Binary logistic regression OR,95%CI**	**P-value for binary logistic regression**
How many hours do you spend at work in a day?	X^2=15.100 df=3 P*<.001		0.165
<2 hours		41(0.00)	1.00
2 to 4 hours		1.498(0.52,4.36)	0.46
4 to 8 hours		2(1.09,3.68)	0.02

>8 hours		Reference	
Is there a presence of Occupational health and safety supervision?	X^2=5.930 df=1 P=.02		0.25
Yes		1.49	
no		Reference	
Have you ever been trained in occupational health and safety training?	X^2=12.109 df=1 P<.001		0.28
yes		1.4(0.75,2.97)	
no		Reference	
Have you ever been provided with occupational health and safety information?	X^2=19.445 df=1 P<.000		0.01
yes		2.5(1.23,5.28)	
no		Reference	
Is there presence Poor working conditions?	X^2=21.288 df=1 P<.000		0.02
yes		0.41(0.19,0.85)	
no		Reference	
Is there a presence of crowded work environment?	X^2=9.187 df=1 P<.002		
yes		1.38(0.65,2.95)	0.40
no		Reference	
Are warning signs present?	X^2=10.659		0.11

yes	df=1	1.8(0.86,3.74)	
no	P<0.001	Reference	
Are safety information boards present?	X^2=8.453 df=1		0.03
yes	P<.004	2.95(1.07,8.08)	
no		Reference	
Are First Aid equipments present?	X^2=3.649 df=1	-	-
yes	P=.06		
no			

3.6 Work Behavioral Characteristics among Respondents

The majority 79.2% of the respondents didn't engage in smoking. More than half (66.9%) of the respondents reported not engaging in alcohol drinking. More than half of the participants (56.5%) reported experiencing job stress while (41.2%) of participants reported being satisfied with their work. More than half (55%) of the respondents reported having never been trained on PPEs use while (46.5%) of the respondents agreed it was mandatory to use PPEs in their workshops. More than half (52.7%) of the participants reported their PPEs being in suitable working conditions, a section (63.8%) of the participants had their PPEs worn properly. More than three-quarters (76.5%) of the participants were not using full protective gears. Only 6.9% of the respondents reported engaging in khat chewing. Only 22.2% of the respondent who reported engaging in smoking were using full PPEs while only 29.1% of the participants who reported drinking alcohol were using full protective gear.Half(50%) of the respondents who reported drinking alcohol agreed it was mandatory to use PPEs while only 9.3% of the respondents engaging in smoking disagreed with the mandatory use of PPEs.

3.7 Work behavioral Factors associated with Occupational Injuries

As indicated in the table below,The following variables revealed a significant relationship with work-related injuries when the bivariate analysis was done; whether personal protective gears were worn properly(X^2 *=103.912, df =1, P<.001*), alcohol consumption(X^2 *=4.109, df =1, P =.04*), job satisfaction (X^2*=7.760, df=3, P*=.04*), perception on mandatory use of PPEs (X^2 *=12.395, df =3, P<.006*), job stress (X^2=23.266, df=1, *P<0.001*), whether personal protective gears were in suitable working condition (X^2 =113.642, *df* =1, *P<*.001), training on PPEs use (X^2*=13.946, df=1, P<.001*) and use of full protective gears(X^2*=7.848, df=1,P<.005*). None of the following variables revealed a significant association with work-related injuries; Chewing khat (X^2*=0.336,df=1,P=0.56*) and Smoking (X^2*=2.910, df=1, P=0.08*).

Significant variables in work behavioral factors were then modeled in the logistic regression. From this study, workers who were using full protective gears were 8.1 times less likely to sustain occupational injuries compared to employees who were not using full protective gears. Moreover, individuals properly

wearing personal protective gear were 59.6 times less likely to sustain occupational injuries. A large proportion of the employers reported insufficient and poor use of PPEs by workers increased the vulnerability of sustaining occupational injuries. One of the employers in the KII narrated that:

"…cause others, they have overall, but they don't know how to use them well, others have gloves but they don't know how to use them well or even they dint use them at all. So, it makes them get injuries which can easily be avoided…" (KII one, employer).

Employees whose personal protective gears were in suitable working condition were 39 times less likely to sustain occupational injuries. Besides, respondents who were dissatisfied with their work were 37 times more likely to sustain occupational injuries than those who were very satisfied. A large proportion of the participants in various FGD noted that job dissatisfaction had a role in sustaining a work-related injury: one of the discussants in the spray painters FGD narrated that:

"…. you can't do something that you don't like and expect evade injuries, you can't tell me what, like doing something I don't want. when doing that activity I will never succeed? people get success because you determined and satisfied with what you do…" (respondent 4, spray painters FGD).

Table 5: Bivariate and Multivariate Logistic Regression Table on Work Behavioral Factors associated with Occupational Injuries.

Independent variables	Chi-square test for independence	Binary logistic regression OR,95% CI	P-value for binary logistic regression
Do you smoke?	X^2=2.910	-	-
yes	df=1		
no	P=0.08		
Do you drink alcohol?	X^2=4.109		0.59
yes	df=1	0.75(0.27,2.11)	
no	P=0.04	Reference	
Are you satisfied with your job?	X^2=7.760		0.07
very satisfied	df=3	37(2.11,651.51)	0.01
satisfied	P*=0.04	49(2.66,930.05)	0.00
neutral		32(1.65,640.71)	0.02
dissatisfied		Reference	
Do you experience	X^2=23.266		0.08

Job stress?	df=1		
Yes	P<.001	0.42(0.15,1.14)	
no		Reference	
Have you ever been trained on PPEs use?	X^2=13.946 df=1		0.12
yes	P<.001	2.11(0.82,5.43)	
no		Reference	
Is it mandatory to always use PPE?	X^2=12.395 df=3 P<.006		0.05
Strongly agree		0.90(0.23,3.39)	0.87
Agree		3.71(0.90,15.17)	0.06
neutral		6.90(0.56,84.49)	0.13
disagree		Reference	
Is the PPE worn properly?	X^2=103.912 df=1		0.00
yes	P=<0.001	59(16.94,209.84)	
no		Reference	
Is the PPE in suitable condition?	X^2=113.642 df=1		0.00
yes	P<.001	39(12.72,119.66)	
no		Reference	
Is the employee using full protective gears?	X^2=7.848 df=1		0.00
yes	P<.005	0.12(0.03,0.42)	
no		Reference	

4. DISCUSSION

From this study, the annual prevalence of work-related injuries was 43.5%. This was similar to a study conducted in Ethiopia that reported the prevalence of occupational injuries was at 42.7%(7). However, a study in Northwest Ethiopia reported a higher prevalence of occupational injuries at 63%(12). While another study done in West Bengal India reported a lower prevalence of 17.5%(4). The difference between reported prevalences could be attributed to differences in study areas, different sampling procedures, and different study populations.

In work environmental factors, workers carrying out their duties in poor working conditions were 2.5 times more likely to sustain a work-related injury than their fellow counterparts. This was consistent with a study conducted in Mexico among Mexican workers which revealed the odds of sustaining an occupational injury was at 7 among employees performing their duties in poor working conditions(13). This was associated with increased exposure to various hazards in working premises that put employees vulnerable to various work-related injuries. However, another study mong high-risk building projects in Pakistan was not in agreement with this study as it found no association between working conditions and sustaining an occupational injury(14). Workers provided with safety information boards were 3 times less likely to sustain work-related injuries. This was consistent with a study done in Canada among immigrants and refugee workers which reported, that workers who were not provided with safety information boards were 3 times more likely to sustain an occupational injury(15). The presence of safety information boards enhances awareness of various impending hazards and dangers thus prompting adequate safety measures to workers. This was contrary to a study done among construction workers in Malaysia which found no association between the provision of safety information boards and sustaining a work-related injury(16).

Provision of occupational safety information reduced the odds of sustaining occupational injuries by 2.5, this was similar to a study done in China's coal mining enterprises, which revealed that workers without occupational safety information were 7.5 more likely to sustain work-related injuries(17). Provision of occupational safety information promotes awareness of the impending hazards at the place of work thus prompting the necessary safety measures. This was contrary to another study in Iran(18). Workers who spent more than 8 hours daily were two times more likely to sustain workplace injuries than those who 4-8 hours in work, this was consistent with a study done in Ethiopia, which reported that workers, working more than eight hours in a day were 5.5 mores time likely to sustain an occupational injury than those who spent less than two hours in work per day(19). This could presumably be due to the excessive tiredness connected to long working hours. However, another study done among factory workers in Ethiopia found no association between the number of hours spent in work and sustaining a work-related injury(20). This was attributed to the presence of working shifts within the eight hours of work.

In work behavioral factors, Employees properly wearing PPEs were 59.6 times less likely to sustain work-related injuries, this was in agreement with a study done among woodwork industry workers in Hawassa Ethiopia which revealed that appropriate use of PPEs reduced the odds of sustaining a work-related injury by 3.3 among workers who were using their PPEs appropriately(21). The appropriate wearing of PPEs reduces exposure to various impending hazards at the workstations thus preventing workers from related occupational injuries. However, this was contrary to a study done among building construction workers in Ethiopia which found no association between appropriate use of PPEs and having a work-related injury(20). From this study, Study respondents who were dissatisfied with their work were 37 times more likely to sustain work-related injuries than those who were very satisfied, this was consistent with a study done among nurses in Korean Hospitals which reported nurses who were dissatisfied with their work were 9 times more likely to sustain a work-related injury than those who reported being satisfied(22). Dissatisfied workers may find no meaning and reason to take responsibility or focus on safety precautions which may exacerbate their risk for injury. However, another study done in Instabul among employees working at wastewater treatment plants found no association between occupational injuries and job satisfaction(23).

Employees whose personal protective gears were in suitable working condition were 39 times less likely to sustain work-related injuries, This was consistent with a study done in Ethiopia which revealed, that workers whose PPEs were worn out were 7.4 less likely to sustain an occupational injury compared to their counterparts(5). Another study done in Malaysia among workers engaging in construction projects confirmed the same findings where workers whose PPEs were suitable working conditions were 5 times less likely to sustain an occupational injury(16). The use of quality PPEs has been proven to protect workers from various workplace hazards hence reducing exposure to work-related injuries. Workers who were using full protective gears were 8.1 times less likely to sustain occupational injuries, This meant the use of PPES provided protection against injuries, this was consistent with another study done in Ethiopia among construction workers, which reported the use of full protective gears reduced the odds of sustaining a work-related injury(24). However, another study in Ethiopia was not in agreement with these findings as it reported there was no association between the use of full protective gear and sustaining an occupational injury(5). Studies conducted have reported that employees who are aware of the need to use full protective gear on the working premises are less likely to sustain work-related injuries compared to their fellow counterparts.

5. Conclusion

From this study, the prevalence of occupational injury was high. Both the employers and the employees should comply with the Kenya occupational safety and health ACT of 2007 which has laid down measures that should be observed at the place of work. There is a need to ensure all motor vehicle repair workers are regularly trained and provided with adequate occupational safety information. The employers and the concerned stakeholders should comply with set policies that mandate workers to perform their duties in a good working environment. There is a need to ensure motor vehicles are regularly trained on PPEs and are also provided with up to standard PPEs to curb the high rates of occupational injuries. when all these measures are put in place, this will ultimately result in a safe working environment.

Ethical Approval And Consent

Ethical clearance and approval to conduct the research were obtained from Mount Kenya University Institutional of Ethics and Review Committee (IREC) with reference number (MKU/ERC/1880) and NACOSTI of license number (NACOSTI/P/21/12806). Permission to undertake the research at the study area was obtained from the appropriate offices in Kiambu County. Confidentiality of the participant's information was highly maintained. Participation of the respondents in the study was purely voluntary whereby the researcher asked for informed written consent from the participants.

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Abbreviations

FDG; focused group discussions, KII; key informant interview, PPE; Personal Protective Equipments, NACOSTI; National Commission for Science Technology and Innovation, SPSS; statistical package for social sciences.