OCCUPATIONAL INJURIES AND ASSOCIATED FACTORS AMONG WORKERS IN MANUFACTURING INDUSTRIES OF MODJO TOWN, CENTRAL ETHIOPIA

MPH THESIS

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June 2018

HARAMAYA UNIVERSITY, HARAR

Occupational Injuries and Associated Factors among Workers in Manufacturing Industries of Modjo Town,Central Ethiopia

A Thesis Submitted To the Department of Public Health
School of Graduate Studies
HARAMAYA UNIVERSITY

In Partial fulfillment of the Requirements for the Degree of
MASTER IN GENERAL PUBLIC HEATH

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June 2018
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HARAMAYA UNIVERSITY
SCHOOL OF GRADUATE STUDIES

I hereby certify that I have read and evaluated thesis entitled; prevalence of Occupational Injuries and Associated Factors among Workers in Manufacturing Industries of Modjo Town,Central Ethiopia prepared under my guidance by Tadesse Tolera I recommend that it be submitted as fulfilling the thesis requirement

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Biography

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ACKNOWLEDGEMENTS

I acknowledge my advisor Dr.Tesfaye Gobena and Mr.Negga Baraki for their technical guidance throughout preparation of thesis. I would like to thank also all data collectors for their interest to participate in this study. My heartfelt thank also goes to Chalcisa Abdeta for his genuine advice during thesis preparation. Finally, I thank all individuals who support me during this thesis work.

LIST OF ACRONMYS/ABBREVIATIONS

AOR	Adjusted odd ratio
BLS USA	Bureau of Labor statistics United States of America
IHRERC	Institutional Health Research and Ethics Review Committee
ILO	International Labor Organization
MOH	Minstry of Health
MOLSA	Ministry of Labor Social Affairs
PI	Principal Investigator
PPE	Personal Protective Equipment
SPSS	Statistical Package for Social Science
USA	United States of America
USEFI	United States Education Foundation India
UNIDO	United Nation Industrial Development Organization
WHO	World Health Organization
EAT	East African Tannery
JZ	Jiaxin Zyanghiizin Tannery

MT	Mojo Tannery
KT	Kolba Tannery
FT	Farida Tannery
Dx	Dx Tannery
GT	Galan Tannery
HF	Halal Food
AM	Addis Mojo Oil complex
OE	organic Export
ME	Modern export
EJ	Ethio japan textile

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACTS

Background: Throughout the world, ocupational injuries continue to pose serious public health problems that cause death, disability and disease. It is estimated that yearly over 2.3 million deaths for reasons attributed to work. In developing countries including Ethiopia, the risk of having work-related injury is 10 to 20 times higher than that of developed countries.The aim of the study was to assess the prevalence of occupational injury among workers of manufacturing industry in Modjo town.

Methods: Inistitution based cross-sectional study was conducted in Modjo town from March 1, 2018 to April 30, 2018.A total of 403 workers were selected by using simple random sampling technique.Trained data collectors collected the data through interview by using structured questionaire. Descriptive statistics like frequency, mean and standard devations were computed for most of the variables.Then; logistic regression was used to compute crudes odd ratio and its 95% confidence intervals; and variables with p-value at <0.2 were included in multivariate logistic regression model to identify the predictors of ocupational injury.

Results: A total of 154 (39.6%) **(**95% CI: 35%, 45%) participant reported occupational injuries during the past 12 months. Males were about two times more likely to have occupational injury compared to females [AOR=1.91, (95%CI: 1.12, 3.28).Low income employee were 4 times more likely to be injured than workers earning average monthly of 2500-3500 ETB per months [AOR=4.37,(95%CI:1.30, 14.69)]. Workers who worked more than 48 hour per week were 9 times more likely to be injured than workers who spend their time in the work place for 48 hours and less [AOR=9.14 (95% CI:5.40, 15.48)]. Odds of occupational injury were 3 times significantly higher among employee who involves their work manual to their counter [AOR=3.38 (95%CI: 19.6, 5.83)].

Conclusion: The study shows prevalence of ocupational injury in Modjo town manufacturing industry was high when compared to some industries.Thus it has a significant public health concern in study area. Among studied variables;sex ,salary, working hours,manul handling and substance abuse were significantly associated with ocupational injuries.Thus efforts should be made by owners of industries,Modjo town labor and social affairs and Modjo town health office to address the alterable factors.

Key Words: Ocupational injury, associated factors, manufacturing industry workers,

1. INTRODUCTION

1.1 Background

International labour organization (ILO) define Occupational injury is any personal injury, disease or death resulting from an occupational accident sustained on worker in connection with the performance of his or her work (ILO,2008). When an individual's health fails, it need not be only due to genetic or biological reasons, working environment also accounts for it (USEFI, 2004). Working people spend most of their daily lives, up to about "seventy percent" within a work environment or thinking about their work, which could affect their "mental status, actions, abilities and performance". As a substantial amount of time is being spent thinking about work or engaged in a work environment, it would be illogical if companies could not work on improving the quality of their employees' work life (Sundustrom, 1994).

Working in the industry is fraught with potential risks and hazards which are categorized under occupational, environmental and public health. The ILO and World Health organization (WHO) estimates that around 1.2 million work-related deaths, 250 million injuries and 160 million work-related diseases occur each year globally. Every year more than 4.1 million workers suffer a serious job related injury and more than 350,000 workers die each year due to injury. The impact is 10 to 20 times higher in developing counties, where the greatest concentration of the world's workforce is located (WHO and ILO, 2001).

Findings of a study conducted in 2007 among textile factory workers in Addis Ababa show that the most frequent causes of occupational injury were machinery 42 (29.4%), and being hit against objects 29 (20.3%)(Abera *et al.*,2007).

Department of Environmental Health in Ministry of Health in Ethiopia reported that strike (25.5%), falling (12.8%), and flying objects from machines (8.5%) were the major causes of occupational injury. The Report shows abrasions, cuts, burns, puncture, and fracture were the common injury types among manufacturing industrial workers. The common affected body parts among eleven industrial workers in Addis Ababa were fingers (37.3%) and hands (11.6%) (MOH,2007).

1.2 Statement of Problem

World Health Organization estimates that injuries constitute 16% of the global burden of disease. This translates into 5.8 million injury-related deaths at a rate of 97.9/100,000 worldwide (WHO, 2002). According to the ILO globally "every day, 6,300 people die as a result of occupational accidents or work-related diseases and more than 2.3 million deaths per year. Three hundred seventeen million accidents occur on the job annually; many of these resulting in extended absences from work. The human cost of this daily adversity is vast and the economic burden of poor occupational safety and health practices is estimated at 4% of Global Gross Domestic Product each year(ILO,2014).

According to results from the Census of fatal occupational injuries in private industry conducted in 2012 by the U.S.A Bureau of Labor Statistics, a total of 4,383 fatal work injuries were recorded in the United States (BLS, 2012). According to study conducted in 2015 in Nigeria among workers in bottling company indicates magnitude of occupational injury is 48.5% (Salamatu Umar Aliyu and Auwal, 2015). Evidences from facility based study conducted in 2014 in Addis Ababa among large scale metal manufacturing industry indicate that the prevalence of occupational injury among workers is 48.9%, working hours, safety training, health supervision, cigarette smoking are significantly associated with occupational injury(Habtu *et al*., 2014).Paper published by the Ministry of Labor and Social Affairs(MOLSA) of Ethiopia in 2006, manufacturing industry has the most hazardous workplace. That is mainly due to lack of safety leadership, the nature of the industry and lack of enforcement of labor proclamation No 377/06 article 92(MOLSA, 2006). Accident report by MOLSA taken from 248 establishments in 2011 showed that there were 16 fatal and 6990 non fatal work accidents. Among the reported 51.78% taken place in agricultural,(hunting, forestry and fishing) sector followed by 42.95% in the manufacturing industries (MOLSA,2011).

According to MOLSA in 2012 reported that Ethiopian industrial manufacturing sector accidents were recorded with 45.2% accident rate (MOLSA, 2012).Study conducted in 2016 in Wukro Tigray among workers of Sheba leather industry showed that the majority of workers (48.5%) in the setting were moderately exposed to occupational risks and hazards with almost equal level of high and low level exposure to occupational risks and hazards (24.7%) and (26.8%) respectively.

A study shows more than a quarter of the workers were exposed to high occupational risks and hazards exposure among workers at the Sheba Leather Company , educational status of workers are significantly associated with work related injury(Amabye, 2016).

In Ethiopia there is rapid industrialization due to favorable investment policy, which may result in an increased number of industries and employment, placing a greater number of people at risk from occupational hazards (Abera *et al.*, 2016). Implementation of occupational health and safety rules had a major problem in developing country (Getachew, 2017). Information on occupation-related diseases and injury or accident is not systematically recorded, evaluated, or monitored in the Ethiopian work setting. Only a few studies describe occupationally related injuries and illnesses (Abera *et al*., 2016).

Article review in 2016 in Ethiopia shows the rate of injuries among factory workers using cross-sectional designs in Addis Ababa varied by studies, with reports of 80 per 1000 exposed population , and 65 per 1000 exposed population(Abera *et a.l*,2016).

A case-control study among 3,100 textile factory workers in Addis Ababa found an incidence rate of 200 injuries per 1,000 exposed workers per year. In the study,50% of the injuries were caused by machinery and getting hit by objects. The finger was identified as the most frequently injured body part. Limited use of PPE (personal protective equipments), workers' lack of training and poor lightning in work places were among the causes of such injuries. In addition, workers' low level of education, their age,work shift, and working places (weaving or spinning sections, for example) were factors associated with increased risk of work textile factory injuries(Abera *et al*.,2016).

Poor perception regarding to working conditions and safety environment had a significant influence on injury occurrence. Most researchers emphasize that work place injuries are caused by poor person environment which leads to increased job stress and, therefore, increases occupational injury risk (Takele and Abera, 2007).

Modjo is a town in Ethiopia where many manufacturing industries were established and also the residence and working area of the investigator this has given the chance for the investigator to observe occupational injuries among manufacturing industry workers.To the knowledge of the

investigator there is limited published research done in Ethiopia on occupational injury among manufacturing industry workers.There is also a great discrepancy in studies explained above in relation to the associated factors of occupational injuries in different industry sectors. Thus, these have motivated the investigator to assess the extent of the problem in study area.

1.3 Significance of Study

The findings of the study will give more insight to Modjo Town Labor and Social Affairs, Mojo Health Office; and owners of industries on the extents of the problems and the related factors which may contribute in making the working environment more conducive and safe for industry workers. Furthermore the study findings will provide baseline information for further investigation.

1.4 Objectives of Study

1.4.1 General objective

- To assess prevalence of occupational injuries and its associated factors among workers of manufacturing industries of Modjo town from March 1, 2018 to April 30, 2018.

1.4.2 Specific objectives

1. To determine prevalence of occupational injuries among workers of manufacturing industries of Modjo town.
2. To identify factors associated to occupational injury among workers of manufacturing industries of Modjo town.

2. LITERATURE REVIEW

2.1 Magnitude of Occupational Injury

Article review conducted in 2012 by Finland Tampere University scholars estimated that globally there are 2.3 million deaths annually for reasons attributed to work. The biggest component is linked to work-related diseases, 2.0 million, and 0.3 million linked to occupational injuries. Globally, cardiovascular and circulatory diseases at 35% and cancers at 29% were the top illnesses responsible for 2/3 of deaths from work-related diseases, followed by occupational injuries at 15% and infectious diseases 10% (Takala *et al*. ,2012).Facility based cross sectional study conducted in 2015 in Bangladesh occupational health hazard among workers in Garment factories shows in the last one year about 28.3% of workers faced minor injury(minor cut,burn) and 64.8% of workers had not exposed to any kind of injury(Rajat *et al*.,2015). A review on occupational health safety in 2016 in Bangladesh with respect to Asian continent shows magnitude of body injury among workers of agriculture (20.1%) construction (18.75%) manufacturing (29.73%), whole sellers and retailers (26.07%) and service (3.3%)(Fabiha *et al*.,2016).

Institution based record review study conducted in 2017 in Garden hospital of South India show that magnitude of occupational injury is 36% (Suguna *et al*., 2017) . According to study conducted in 2015 in Nigeria among bottling company workers indicates magnitude of occupational injury is 48.5% (Salamatu and Auwal, 2015).Study conducted in 2014 in Ghana shows magnitude of work related injury is 64% (Isaac et *al*.,2014). According to study conducted in 2012 in Ethiopia among Dire tannery workers shows magnitude of body injury is 45%(Yewaydemam,2012). Institution based cross sectional study conducted among textile industry of Kombolcha and Arbaminch shows magnitude of occupational injury is 36.9 and 31.4% respectively(Yussuf *et al*. ,2013)(Gebremichael *et al*., 2015).

Facility based cross sectional study conducted among workers of small scale and large scale industry in Mekelle,Addis Ababa,Bahirdar and Mugher shows the overall prevalence of occupational injury prevalence rate ranges (10.4-58.2%) in which highest injury finding is

among workers of Mekelle small scale industry 58.2% (Abera *et al*.,2015) and lowest among mugher cement factory workers 10.4%(Gebretsadik,2014);(Yitagesu *et al*.,2014) ;(Getnet,2015). Facility based cross sectional study conducted in 2017 in Gambella region Ethiopia among Saudi Agro industry shows prevalence of work related injury is 36.7% (Daniel and Berhanu ,2017).Study conducted in 2016 in Wukro Tigray among workers of Sheba leather industry showed that the majority of workers (48.5%) in the setting were moderately exposed to occupational risks and hazards with almost equal level of high and low level exposure to occupational risks and hazards (24.7%) and (26.8%) respectively.A study shows more than a quarter of the workers were exposed to high occupational risks and hazards exposure among workers at the Sheba Leather, educational status of workers are significantly associated with work related injury (Amabye, 2016).

Facility based study conducted among eighteen manufacturing industry in 2016 in Addis Ababa shows the estimated annual number of injured cases were 3,769(14.1%) among them 15,166(53.8%) workers were temporarily disabled, 12,368 (43.8%) workers were partially disabled, 629(2.2%) workers were totally disabled and 58 (0.2%) workers have died. Additionally, the estimated total lost workday were 128,431.5 days; an average of 7.5 workday per injury. The injured employee affected body part, types and causes of injury from the available data indicate that more than 75% of the affected body parts were hand and finger 1836 (48.7%), leg and foot 814(21.6%) and back; spine and vertebra 283(7.5%). Regarding types of injury, puncture 1,602(42.5%), abrasion 645 (17.1%), cut and mutilation 520 (13.8%) and dislocation and sprains 264 (7%) accounted for 80% type of injuries. Similarly, 80% of the injuries are caused by six causative agents; machine 720(19.1%), falling objects 645(17.1%), collision 539(14.3%), hand tools 482(12.8%) and hit by objects 369(9.8%) respectively (Hayilye *et al* .,2016).

A review article done in 2016 in Ethiopia manufacturing industry shows that prevalence of injury among workers engaged in operations in two metal factories was 333 per 1000 per year. Flying objects, falling, and machinery caused 43% of the injuries. Workplace hazards including

Unguarded machines, splitting materials, metal sparks, molten metal, excessive heat, and slippery and unleveled floors contributed to the occurrence injuries in the factories (Abera *et al*,2016).

2.2 Associated Factors

2.2.1 Sociodemographic factors

A cross sectional study conducted in 2015 in Nigeria among Bottoling compony workers indicates significant association was found between age at ($p<0.05$) and educational status ($p<0.001$) (Salamatu, 2015).A cross sectional study conducted in 2014 in Addis Ababa among large scale manufacturing industry shows there is significant relation magnitude of occupational injury with sex that, males were 3.32 times more likely to be injured when compared to females [AOR: 3.32, 95% CI: (1.88, 5.85)] (Yitagesu *et al*.,2014). Cross sectional Study conducted in 2017 in Addis Ababa shows male workers were 4 times higher more likely to be injured when compared to female workers [AOR=4.157, 95%CI (1.554-11.120)].Working for 48 h or less per week decreased occupational injury by 58.1% as compared to working for more than 48 h [AOR= 0.429, 95%CI (0.187-0.967)].(Hanna *et al*,2017). Study conducted in 2017 in Gambella among Saudi Agro industry workers shows workers who are single were 1.73 times more likely to report work related injury than workers who are in marriage [AOR; 1.73; 95%; CI (1.09–2.75) and workers whose service year less than or equal to 3 were 1.89 times more likely to report work related injury than whose service year above 3 years [AOR; 1.89; 95%; CI; (1.16–3.08)(Daniel and Berhanu,2017).A cross sectional Study conducted in 2015 in Arbaminch among textile workers shows work related injury was associated with income , that workers paid below the mean had about 3.5 times more likelihood of being injured compared to those earning higher salary(Gebremichael *et al*., 2015).Stduy conducted in 2017 in Addis Ababa shows Males were 1.96 times more likely to get injury when compared with females [AOR: 1.96, 95%CI: (1.05, 3.67)] and temporary workers were 2.65 times more likely get injured compared with permanent workers [AOR: 2.65, 95%CI: (1.49, 4.71)];(Zeleke,2015).

2.2.2 Working environments

A cross sectional study in 2014 in Addis Ababa among large scale manufacturing industry shows there is significant relation occupational injury with hours worked per week ,safety and health supervision. Participants who were engaged to work 48 hours or more per week were 2.37 times

more likely to be injured compared to those who were engaged to work for less than 48 hours per week [AOR: 2.37, 95% CI: (1.55, 3.61)] and Workers without health and safety supervision were 1.60 times more likely to be injured than those who were supervised [AOR: 1.60, 95% CI: (1.03, 2.60)]. Participants who were assigned at a work environment lacking functional danger signs were 2.65 times more likely to be injured than opposite work environment [AOR: 2.65, 95% CI: (1.67, 4.19)] (Yitagesu *et al*., 2014).

A cross sectional study conducted in 2017 in Addis Ababa shows working for more than 8 hours per day were 4.78 times more likely to be injured than workers work in shift (AOR= 4.78: 95% CI 1.95,11.68). The odds of work related injury was lower among those who had occupational health and safety training (AOR= 0.25: 95% CI 0.10, 0.63) and use PPE (AOR= 0.32: 95% CI 0.14, 0.75) than those who had no training and do not use PPE(Asrat and Dagnachew,2017). Study conducted in 2017 in Gambella among Saudi Agro industry workers variables, hours worked per week, safety training showed significant association with work related injury. Workers who worked more than 48 h per week were 8.33 times more likely to be injured than workers who spend their time in the work place for 48 h and less [AOR; 8.33; 95%; CI (4.87–14.41)]. Similarly, workers without safety and health training were 4.56 times more likely to be injured than who had training [AOR; 4.56; 95%; CI;(1.299–16.1)](Daniel and Birhanu ,2017) The odds of having injury in workers with extra hour duty was 4 times more after adjusting all factors [AOR (95% C.I): 4.1 (1.7,9.8)].Having health and safety training, and regular workplace supervision were associated with 60% and 64% times decreased odds of injury,respectively [AOR (95% C.I): 0.4 (0.17,0.97), 0.36 (0.17,0.75)] (Gebremichael *et al.*, 2015).

2.2.3 Behavioral factors

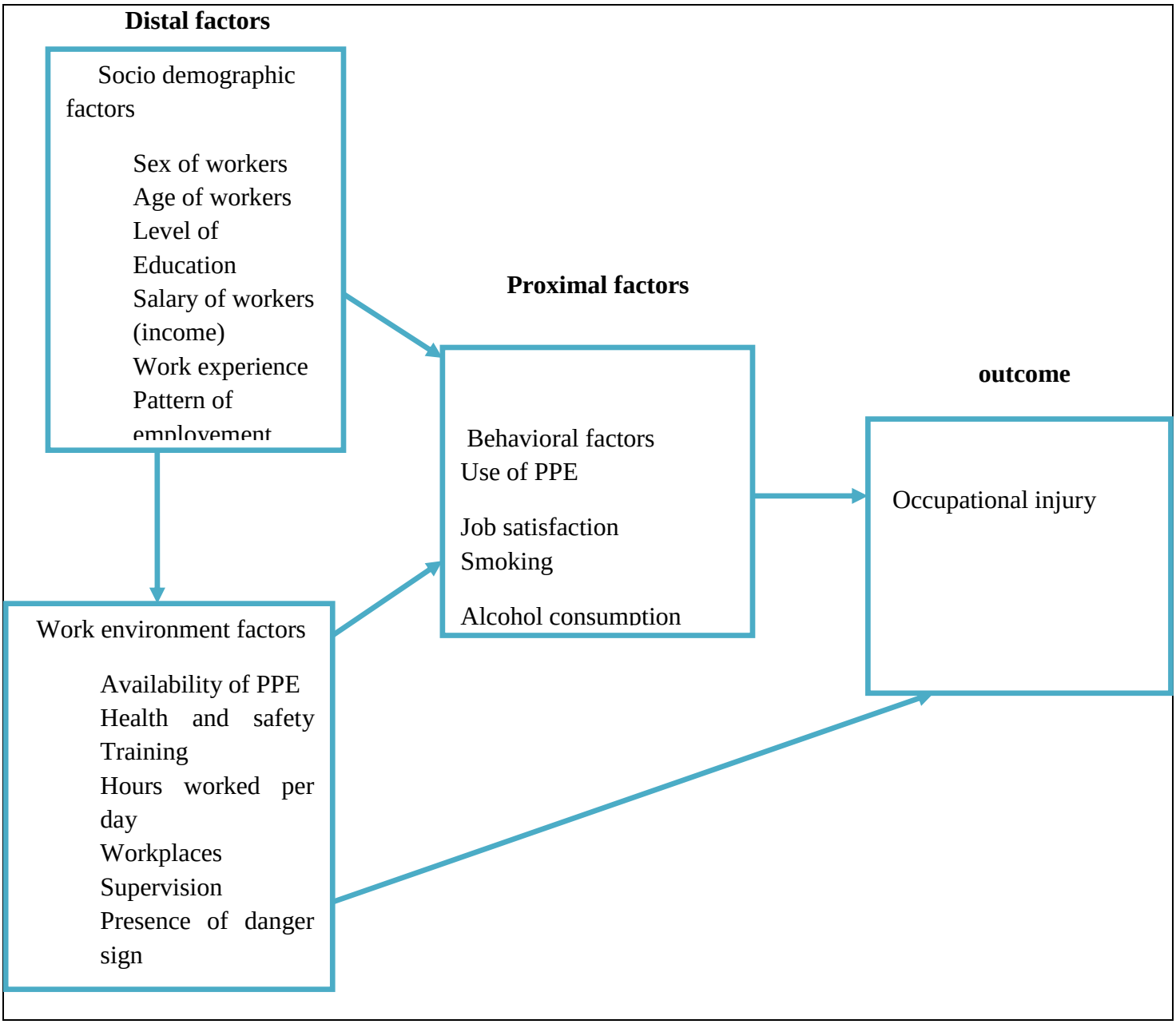
A cross sectional study in 2014 in Addis Ababa among large scale manufacturing industry shows there is significant relation magnitude of occupational injury with cigarette smoking. Smokers were 3.36 times more likely to be injured when compared to non smokers [AOR: 3.36, 95% CI: (1.73, 6.50)] (Yitagesu *et al*., 2014).

A cross sectional study conducted in 2017 in Addis Ababa shows work related injury was higher among those who were cigarette smokers (AOR= 4.65: 95% CI 1.53,14.20), alcohol consumers [(AOR= 5.18: 95% CI 2.28,11.73)](Asrat and Dagachew,2017).

A Study conducted in 2017 in Gambella among Saudi Agro industry workers who did not used personal protective equipment's were 2.58 times more likely to reported work related injury than workers who did use PPE in the work place [AOR; 2.58, 95%; CI (1.17–5.68](Daniel and Birhanu ,2017).Study conducted in Arbaminch shows , PPE use and job stress showed association with injury significantly. Workers who use PPE had lower probability of injury than those who do not use [AOR:(95%C.I): 0.4(0.15, 0.9)]. Moreover, the odds of injury among job stressed was 2.4 more than among the non-stressed [AOR (95% C.I): 2.4 (1.1, 5.4)] (Gebremichael *et al.*, 2015).

Conceptual framework

In summary, the conceptual framework below (figure-1) illustrates that, there are several factors influencing health of individual at works such as socio-demographic factors, working environment and behavioral factors, the relationship between factors that may contribute to increase or decreases occupational injury. Also framework shows association is considered within socio-demographic factors, working environment and behavioral factors which potentially influence the presence and the absence occupational injury in the manufacturing industry. Among three main factors, behavior factors are the proximate factors.



[Figure 1]: conceptual framework shows factors related with occupational injury adopted from literature review (Mirur, 2017)

3. METHOD AND MATERIALS

3.1 Study Area

The study was conducted in Modjo town which is located in Oromia region. Modjo town is located in eastern direction 58km from Addis Ababa capital city of Ethiopia. According to census 2007 number of population in Modjo town is 54,261(female 28,215 male 26,045) .Modjo has two kebeles (01 kebele and 02). There are 22 manufacturing industry with 4,396 workers as Modjo town labor and social affairs data shows.The most languages spoken in this town is Afaan Oromo followed by Amharic language. The town has one government hospital, one private hospital, two health center and nine private clinics of various types providing health care service for the population. The study period for this research was from March 1, 2018 to April 30, 2018.

3.2 Study Design

Manufacturing industry based cross sectional study was used.

3.3 Source Population

The source of population of study was all manufacturing industry workers engaged in production process in Modjo town.

3.4 Study Population

The study population in this research was workers who are directly engaged in production process in selected manufacturing industries.

3.5 Inclusion and Exclusion Criteria

3.5.1 Inclusion criteria

All workers who were directly involved in production process in the last one year.

3.5.2 Exclusion criteria

Adminstration, supportive staff and manufacturing industry workers who are ill or hospitalized and unable to respond during data collection were excluded; and workers who absent during data collection for any kind of reason also excluded.

3.6 Sample Size Determination

The sample size required for this study was calculated using single proportion formula and Epi Info 7 StatCalc was used for the computation. Then the larger sample size was selected from both (magnitude and associated factors) as a final sample size for the study.

For objective 1:

Sample size for prevalence was determined by the following single proportion formula

$n = z^2p(1-p)/ d^2$

Where,

n = maximum sample size required

$Z_{\alpha/2}$ = Confidence level; taking 95% (1.96)

d= marginal sampling error (0.05)

p = prevalence of occupational injury of facility based study in Addis Ababa workers of large scale manufacturing metal shows 48.9% (Yitagesu *et al*., 2014).

$$n = \frac{(1.96)^2 * 0.489(1- 0.489)}{(0.05)^2} = 384$$

Then 5% of non response rate was added since data collection procedure was face to face interview. Sample size for prevalence will be 384+19 =40**3**.

For specific objective:

Sample size was calculated using Statcalc under Epi Info 7 software. Weekly working hours, safety training and cigarette smoking are of the major factors associated with work related injury. According to study conducted in 2014 Addis Ababa workers of large scale manufacturing metal show that magnitude of workers 561 (67.7%) of respondents were at work for 48 or more hours, 550(66.9%) had not ever taken safety and health training and 119 (14.4%) are smokers.Injury among workers shows smokers were 3 times more likely to be injured when compared to non smokers [AOR: 3.36, 95% CI: (1.73, 6.50)].

Participants who were engaged to work 48 hours or more per week were 2 times more likely to be injured compared to those who were engaged to work for less than 48 hours per week [AOR: 2.37, 95% CI:(1.55, 3.61)]. Yitagesu et al, 2014).

Using information (finding of selected study), sample size for selected associated factors is calculated as follows:

Step 1: Open Epi info 7

Step 2: click on Statcalc option then select sample size and power then point to cohort or cross sectional study.

Step 3:select cohort or cross sectional study and fill the following information in respective places.

Two-side confidence interval (1-α) = 95%

Power (1-β) = 80%

Ratio of(unexposed exposed) = 1:1

Percent of outcome in unexposed= 35%.safety training

% of outcome in exposed group=55% safety training (Yitagesu et al.,2014)

Step 4: total sample size will be generated automatically for three selected associated factors in the same.

I.sample size for safety training

Calculated sample size=212 Then 5% of non response rate was added =11; total sample size =223.

II.sample size for hours of work more than 48hrs based on information collected from finding of (Yitagesu et al.,2014)

Outcome in unexposed=25%

Outcome in exposed=60%, calculated sample size=72 by adding non response rate 5%=4 total sample size was=76

III.sample size for cigarette smoking based on information collected from finding of(Yitagesu et al.,2014)

Outcome in unexposed =43%

Outcome in exposed=80%

Calculated sample size=64 then by adding non response rate 5%=3 the total sample size was=67

Table 1: The sample size is summarized below:

Magnitude and determinants	Author	Year of publication	prevalence	Calculated sample size	Non response rate(5%)	Total sample size
Magnitude of occupational injury	Yitagesu et al.	2014	48.9	384	19	403
Safety training	Yitagesu et al.	2014	69.7	212	11	223
Working hours more than 48hrs	Yitagesu et al.	2014	67.7	72	4	76
Cigarette smoking	Yitagesu et al.	2014	14.4	64	3	67

As indicated on the above table 1, the largest possible sample size is 403.

3.7 Sampling Procedures

First; the manufacturing industries (N=22) was stratified based on their type namely: Tannery (N=12), Food processing (N=9) and Textile (N=1) industry.Then 12 manufacturing industries were selected randomly from all strata through proportional allocation to their number.Accordingly; 7 tanneries, 4 food processing and one textile industries were selected. The calculated sample size was assigned to each selected manufacturing industries by proportional allocation to size of the workers. Finally, study participant who are directly engaged in the production process from various working section was selected using simple random sampling technique. The detailed sampling scheme is shown in figure 2.

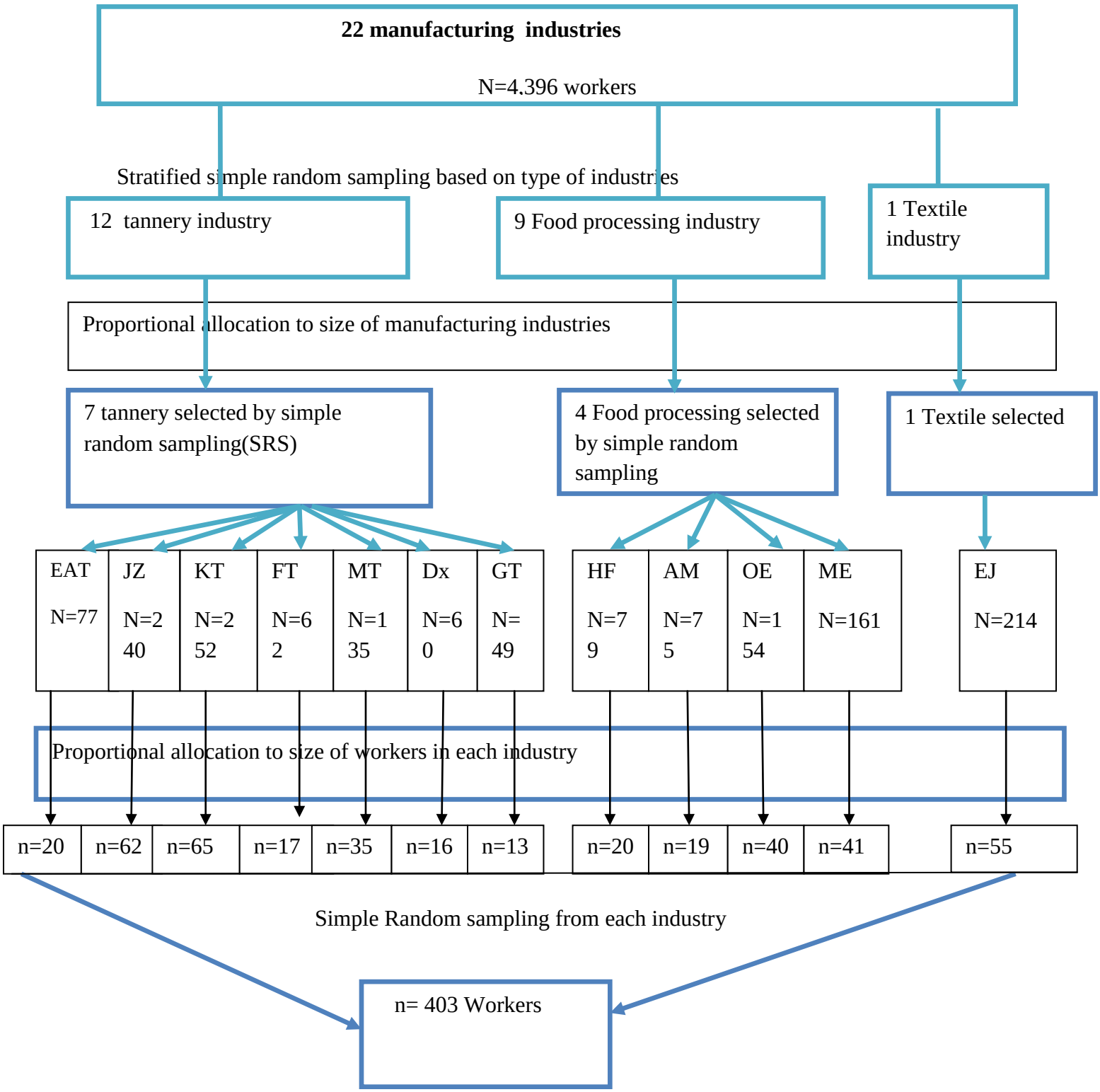


Figure 2: Schematic presentation of the sampling procedure.

3.8 Data Collection Methods

3.8.1 Data collection instruments

Data was collected using structured questionnaire which was developed from various literatures.The questionaire contains sociodemographic, behavioral and working environment factors that determine occupational injury in industry area (Getachew, 2017 and Zeleke, 2015). All selected questions developed from different litratures questionnaire was translated in to both Afaan Oromo and Amaharic to suit the local conditions and then back to English to verify the transilation.It was pre tested in Hora tannery out of study population 5 days a head of the final work and appriopriate adjustements was made before it is finalized.

3.8.2. Data collectors

Six data collectors were recruited for 10 days those have Bsc Nursing, Bsc in Enviromental Health and Health Officer who speaks both Afaan Oromo and Amharic language. Close supervision was made by investigator with one Bsc occupational health expert that is familiar with the study areas. Before the data collection process training for data collectors and supervisors was given about ethics, questionnaires as well as how to interview the study participants in order to collect full information. The filled questionnaires were submitted on every day basis at the end of the day. Every morning meeting was made with data collectors to solve problems happen during the interview. Daily reviewing of filled questionnaires was made by investigator to minimize the errors created during interview as early as possible.

3.8.3 Data collection procedures

Data was collected using face-to-face interviewer-administered based questionnaire by trained data collectors. The interview was adiminstered in a separate place to keep respondent’s privacy. The confidentiality of information collected from individuals was kept and explained for the respondents prior to interview**.**

3.9 Study Variables

3.9.1 Dependant variable

The dependant variable in this study is Occupational injury

3.9.2 Independent variables

i. Socio demographic factors(age,sex,religion,marital status ,educational status, working experiences and employment condition)
ii. Working environmental factors (availability of PPE, health and safety training, hours worked per week or day, health and safety supervision)
iii. Behavioral factors(smoking,alcohol,use of PPE, job satisfaction)

3.10 Operational Definitions

Occupational injury: any personal injury resulting from an occupational accident sustained on worker in connection with performance of his or her work in the past 1 year but not include work related diseases that need exposure assessment and laboratory tests (ILO, 2008).

Personal Protective Equipment: - Utilization of the worker specialized clothing or equipment worn by employees for protection against health and safety hazards at the time of interview(Daniel and Berhanu, 2017).

Cigarette smoker: - An employee who were smoking one cigarette a day or occasional for at least 1 year (WHO, 1998).

Alcohol drinker: - An employee who drinks alcohol at least five drinks per week for men and two drinks per week for women for at least 1 year (WHO, 1998).

Job satisfaction: a state of pleasurable emotional feeling reported by the worker as the result of one's job. It is a subjectively perceived response of in study participants to their job(Miruri 2017).

Khat chewer: An employee chewing khat (a mild psychoactive substance) three times a week for at least 1 year (Sabsibe, 2016).

Safety guarding of machine: the machine is safe if it safegaurds workers from contacts with dangerous moving parts.

Manual handling; the movement or support of any load effort, including; lifting put down pushing, puling, carrying and moving.

3.11. Data Quality Control

Training was given for data collectors and supervisors. The training was focus on relevance of the study, objective of the study, ethical issues and informed consent while dealing with respondents. Interview techniques using standardized questionnaires selected for this study was discussed in detail. Questionnaires was prepared in English and translated into Afaan Oromo and Amharic languages then translated back to English language to check for consistency.Data collectors was informed how to avoid data collection duplication and incomplete data recording. Interviewers were ask the respondents what is written on the questionnaires only including the instructions. Close supervision was made throughout data collection process to keep the completeness of data.Pre-testing was conducted on 5% of the total sample size 19 workers in Hora tannery manufacturing industries workers of Modjo town out of study unit prior to data collection. Based on the pre-test finding, necessary modification will be made on the selected questionnaires according to the local context. Data clerk was entered the data as coded and written on the paper. Double data entry was made to avoid errors, missing and duplication of data during data entry. Data was cleaned, coded and entered into EpiData version 3.02 to make ready for analysis

3.12 Method of Data processing and Analysis

Data were exported from Epi Data version 3.02 into SPSS version 20 for processing and analysis. Descriptive statistics such as (frequency, mean and standard deviations) was computed. Cross tabulation and chi-square test was used to test the existence of significant association of independent variables with dependent variable. Variables with P <0.2 during the bivariate analysis were included in the multivariable analysis.Logistic regression was used to compute adjusted odd ratio and its 95% confidence interval to identify predictors of ocupational injurie.Cutoff point for statistical siginificance was at p-value <0.05.The findings of this study were presented by frequency tables.

3.13. Ethical Consideration

Ethical approval was obtained from Institutional Health Research Ethics Review Committee (IHRERC) of Haramaya University College of Health and Medical Sciences to conduct this study.The data was collected after getting consent from industry head as well as written and signed informed consent was obtained from the study participants. Each participant and industry head was notified about the purpose of the study and the right to refuse or to participate in the

study. Individual was interviewed in a separate place to keep privacy. Participant was informed that information obtained was used only for a research purpose. Other necessary precaution was used to protect the confidentiality. Health education on risk factors and consequences of occupational injury was provided for workers following this study result.

3.1.4 Dissimination of Research Finding

The result of this study will be submitted and presented for Haramaya University School of graduate studies. An attempt will made to present the result of this study in the scientific conferences and publish on the local or international journals.

4. RESULTS

4.1. Socio demographic characteristics of the study participants

From 403 samples, 389 respondents participated in the study brings the participation rate to 96.5%.Of them 231(59.4%) were male.The mean ± SD age of the respondents was 29 ± 8.8 with 18 and 60 the minimum and maximum years respectively,290(74.6%) followers of Ethiopian orthodox. One hundred thirty seven 137(35.2%) completed primary school, 6(1.5%) were illiterate and 241(61.9%) were completed secondary and above. Two hundred four 204(52.4%) were married, 173(44.5%) were single; 360(92.5%) were permanent employee and 302(77.6%) earn a monthly salary below 2500(Table 2).

Table 2: **Socio-demographic characteristics of participant in manufacturing industry in Modjo town Central Ethiopia March to April, 2018 (n=389)**

Variables (n=389)	Frequency	Percent (%)
Sex		
Male	231	59.6
Female	158	40.4
Age		
18-25	165	42.4
26-35	155	39.8
>35	69	17.8
Religion		
Orthodox	290	74.5
Protetsnt	52	13.4
Muslim	27	6
Others	20	5
Current Marital status		
Single	173	44.5
Married	204	52.4
Divorced	5	1.2
Separated	5	1.2
Widowed	2	.5

Ethnicity		
Oromo	225	57.8
Amhara	122	31.4
Others	42	10.7
Educattinal status		
Below secondary	148	38
Secondary and above	241	62
Salary		
< or =2500	302	77.6
2500-3500	52	13.4
>=3500	35	8.9
Pattern of employment		
Permanent	360	92.5
Temporary	29	7.5
Work experiences		
<=5	292	75.1
>5	97	24.9

4.2 Prevalence of Ocupational Injury

Among the study participants, 154 (39.6%) (95% CI: 35%, 45%) had ocupational injury in the last 12 months.From this Food processing industry account 19.3% Tannery industry 13.6% and Textile 6.7%.Moreover, 67 (17.2%) of participant were also injured at job in the last two weeks. With respect to the frequency of injury occurrence in the last 12 months, 87 (56.5%) paticipant were injured once, and 67(43.5%) injured more than once.

From injured participant, affected body parts were; hand **72**(46.7%), finger 37(24%), lower leg 14(9.1%) eye 11(7.1%) and back 8(5%). With respect to type of injuries, 61 (39.6%) cut, 38 (24.7%) abrasion, 24 (15.6%) puncture, 18(11.6%) dislocation were the most type of injury reported by participant**(Table 3).**

Table 3: Body parts affected and injury type among injured workers in manufacturing industry in the last 12 months Modjo town March to April, 2018(n=154)

Injury charcterctics(n=154)	**Frequency**	**Percent(%)**
Affected body part		
Hand	72	46.7
Finger	37	24
Lower leg	14	9.1
Eye	11	7.1
Back	8	5
Tooth	5	3.2
Toe	5	3.2
Lowerarm	3	1.8
Upper arm	2	1.3
Hip	2	1.3
Upper leg	2	1.3
Head	2	1.3
Ear	2	1.3
Types of injury		

Cut	61	39.6
Abrasion	38	24.7
Puncture	24	15.6
Dislocation	18	11.7
eye injury	10	2.6
Fracture	4	2.6
Burn	4	2.6
Poisoning	4	2.6

The total frequency and percent exceeds 154 and 100 respectively, due to multiple responses. Or multiple type of injury by single person.

4.3 Cause, days and time of injury

Machinery 50 (32.5%), handtool 44(28.6%), collision with objects 20 (12.9%) splinting objects 10 (6%) and lifting objects 13 (8%) were the top sources of work related injures .With regard to the specific days of injuries, 37(24%) were on Tuesday, 25(16%) were on wednsday and most respondent injured in the afternoon 69(44.8%**)**

Table 4: Source of injury, days and time of injury in the last 12 months among manufacturing industry Modjo town centeral Ethiopia, 2018 (n=154)

Charcterictics	**Frequency**	**Percent(%)**
Source of injury		
Machinery	50	32.5
Handtool	44	28.5
Collision with heavy objects	20	12.9
Lifting heavy objects	13	8.4
Splinter objects	10	6.4
Hit	4	2.5
Hit by falling objects	4	2.5
Other	9	5.8
Days of injury		

Monday	22	14.3
Tuesday	37	24
Wednsday	25	16.2
Thursday	25	16.2
Friday	19	12.3
Saturday	9	5
Sunday	12	7.7
Time of injury		
Morning	57	37
Afternoon	69	44.8
Evening	13	8
Midnight	**2**	**1.2**

4.4. Working Enviroment Related charcterictics

One hundred fifty four (39.6%) respondents worked more than 48 hours per week. Two hundred twenty six (58.1%) of the participant reported that their work involve manual handling of their activities. Majority (63.8%) of the respondents were not taken any health and safety training.

Table 5: Working environment charcterctics of participant in manufacturing industry workers of Modjo town Centeral Ethiopia, 2018(n=389)

Characterctics(n=389)	Number	Percent (%)
Working hour in a week		
<=48hr	235	60.4
>48hr	154	39.6
Supervision		
Yes	90	23.1
No	299	76.8
Safety training in working area		
Yes	223	57.4
No	166	42.6

job involve Manual handling of activity		
Yes	226	58.1
No	163	41.9

4.5. Availabilty and Utilization of Personal protective equipement

Three hundred fifty four (91%) participant utilize personal protective equipiment 224(63.2%) were use glove and 62% of participant were used PPE all times. The majority worker reason for not use PPE were no access and not fill discomfort.

Table 6: Availability and utilization of PPE and safety training of manufacturing industry workers in Modjo town centeral Ethiopia level, March to April, 2018(n=389)

Variables	**Frequency**	**Percent (%)**
PPE utilization (n=398)		
Yes	354	91
No	35	9
PPE all the time(n=389)		
Yes	250	62
No	148	38
Reason for not use PPE for all time (n=148)		
No access	125	84.5
Not to fill discomfort	16	10.8
Lack of awerness	7	4.7
On job training(n=389)		
Yes	164	42.2
No	223	57.8

4.6 Behavioral Characterctics

One hundred seventeen (30.1%) and 19(4.8%) of the participant consumed alcohol and chewed khat respectively.About 29 (7.5%) of the respondents reported that they had sleep disturbance. The majority 234 (60.2%) of the participant were satisfied by their current job. (Table 7).

Table 7: Behavioral factors characterctics of participant in manufacturing industries in Modjo town centeral ethiopia, March to April 2018,(n=389)

Variable(n=389)	Number	Percent(%)
Alcohol drink		
Yes	117	30.1
No	272	69.9
Cigarette smoking		
Yes	10	2.6
No	378	97.4
Khat	370	95.1
Yes	19	4.8
No	370	95.2
Sleeping disorder		
Yes	29	7.5
No	360	92.5
Jobsatisfaction		
Yes	234	60.2
No	155	39.8

4.7 Factors associated with ocupational injury

In Bivaraite analysis:educational status, sex, ,working hours per weeks, safety job training for employee,manual working,using PPE all the time,presence of any sleeping disturbances/problems and average monthly salary were variable associated with occupational injury at P<0.2 (Table 8).

Table 8:Factors associated with occupational injuries in manufacturing industries of Modjo Town , Central Ethiopia, 2018.

Associated Factors		Occupational injury		COR (95%CI)	P-value
		yes(%)	No (%)		
Age	18-25	61(37.0)	104(63.0)	0.86(0.48,1.53)	0.63
	26-35	65(41.9)	90(58.1)	1.06(0.61,1.88)	0.85
	>35	28(40.6)	41(59.4)	1	
Sex	Male	107(46.3)	124(53.6)	2.03(1.33, 3.13)***	0.001
	Female	47(29.7)	111(70.3)	1	
Pattern of employees	Permanent	11(37.9)	18(62.1)	1	0.85
	Temporary	143(39.7)	217(60.3)	0.927(0.425,2.02)	
Educational Status	Below secondary	76(51.4)	72(48.6)	2.21(1.45, 3.36)***	<0.001
	Secondary/Above	78(32.4)	163(67.6)	1	
Service year in organization in same work	≤5 years	120(41.1)	172(58.9)	1.29(0.8,2.08)	0.29
	>5years	34(35.1)	63(64.9)	1	
Salary	<2500 ETB	120(41.1)	172(58.9)	1.91(0.86, 6.80)	0.039
	2500-3500 ETB	25(48.1)	27(51.2)	2.65(1.05, 6.80)*	0.111

	>3500 ETB	9(25.7)	6(74.3)	1	
Working hour per week	>48 hours	109(70.8)	45(29.2)	10.23(6.36,16.45)***	<0.001
	≤48 hours	45(19.1)	190(80.9)	1	
Regular health supervision	No	122(40.8)	177(59.2)	1.25(0.77,2.04)	0.372
	Yes	32(35.6)	58(64.4)	1	
SafetyJob training for employee	No	113(45.6)	135(54.4)	2.04(1.31, 3.17)***	0.001
	Yes	41(29.1)	100(78.9)	1	
Manual working	No	116(51.3)	110(48.7)	3.47(2.22, 5.42)***	<0.001
	Yes	38(23.3)	125(76.7)	1	
PPE using condition	Always	82(33.6)	162(66.4)	1	0.002
	Not always	72(49.7)	73(50.3)	0.5(1.28, 2.97)**	
Substances abuse	Yes	71(45.7)	55(56.3)	2.80 (1.81, 4.34)***	0.007
	No	83(31.6)	180(68.4)	1	
Having any sleeping disturbance/problem	Yes	17(58.6)	12(41.4)	2.31 (1.07, 4.98)*	0.029
	No	137(38.1)	223(61.9)	1	

Multivarable Reggression analysis

During multivariable analysis, males were about two times more likely to have occupational injury compared to females [AOR=1.91(95%CI: 1.12, 3.28)].Employee with low income salary were 4 times more likely to be injured than workers earning average monthly of 2500-3500 ETB per months [AOR=4.37(95%CI:1.30, 14.69)]. Workers who worked more than 48 hours per week were 9 times more likely to be injured than workers who spend their time in the work place for 48 hours and less [AOR=9.14 (95% CI:5.40, 15.48)]. Odds of occupational injury were 3 times significantly higher among employee who involve their work manual to those not work manually [AOR=3.38 (95%CI:19.6, 5.83)]. Employ who consume or use Substance abuse was 2 times more likely to be injured compared to their counter part [AOR=2.16 (95% CI: 1.25, 3.74)]

Table 9: Factors Independantly associated with occupational injuries in Modjo Town, Central Ethiopia, 2018.

Associated factors		**Occupational injury**		**COR(95%CI)**	**P-value**	**AOR (95%CI)**	**P-value**
		yes(%)	No (%)				
Sex	Male	107(46.3)	124(53.6)	2.08(1.33, 3.13)***	0.001	1.91(1.12, 3.28)	0.026
	Female	47(29.7)	111(70.3)	1		1	
Educational status	Below secondary	76(51.4)	72(48.6)	2.21(1.45, 3.36)***	<0.001	1.723(0.993,2.983)	0.530
	Secondary /Above	78(32.4)	163(67.6)	1		1	
Salary	<2500 ETB	25(48.1)	27(51.2)	1.91(0.86, 6.80)	0.111	4.37 (1.30, 14.69)*	0.03
	2500-3500 ETB	120(39.6)	182(60.3)	2.65(1.05, 6.80)*	0.039	2.35 (0.85, 6.46)	0.035

	>3500 ETB	9(25.7)	6(74.3)	1		1	
Average working hours per week	>48 hours	109(70.8)	45(29.2)	10.23(6.36,16.45)***	<0.001	9.14 (5.40,15.48)***	<0.001
	≤48 hours	45(19.1)	190(80.9)	1		1	
SafetyJob training for employee	No	113(45.6)	135(54.4)	2.04(1.31, 3.17)***	0.001	0.846(0.500,1.430)	0.653
	Yes	41(29.1)	100(78.9)	1		1	
Manual working	No	116(51.3)	110(48.7)	3.47(2.22, 5.42)***	<0.001	3.38(19.6, 5.83)***	<0.001
	Yes	38(23.3)	125(76.7)	1		1	
PPE using condition	Always	82(33.6)	162(66.4)	1	0.02	1	0.127
	Not always	72(49.7)	73(50.3)	0.5(1.28, 2.97)**		1.547(0.884,2.702)	
Having any sleeping disturbance/problem	Yes	17(58.6)	12(41.4)	2.31 (1.07, 4.98)*	0.029	1.668(0.607,4.553)	0.323
	No	137(38.1)	223(61.9)	1		1	
Substances abuse	Yes	71(45.7)	55(56.3)	2.80 (1.81, 4.34)***	0.007	2.16 (1.232, 3.76)**	0.007
	No	83(31.6)	180(68.4)	1		1	

- Significant at P<0.001=***, at P<0.01=** and at P<0.05=*, COR=Crude OR and CI= Confidence Inter, AOR=adjusted OR

5. DISCUSSION

Determining the prevalence of ocupational injuries and identifying associated factors are essential in the development of injury prevention strategy in manufacturing industry .This industry based cross-sectional attempted to assess the prevalence and factors associated with occupational injuries in the last 12 months among the manufacturing industry workers in Modjo town.The study results showed that overall prevalence of occupational injury in the last 12 month was 154(39.6%),sex,monthly salary,working hours,manual handling and substance abuse were factors siginificantly associated.From this food processing account 19.3% tannery industry 13.6% and textile 6.7%.This study similar with the study done in Gambela 36.7% Danel and Birhanu;2017) , kombolcha 36.9%(Yessuf *et al*.,2013) and in india 36%(Suguna,et al;.2017).

This study indicates slightly high rate of ocupational injury compared to a study made on other industries. For instance in Arbaminch magnitude of ocupational injury among textile industry workers is 31.4%, in Bahirdar 34.2%(Getnet,etal,.2015), and Study done in Bangldesh 28.3%% (Rajat *et al*.,2015) have lower prevalence reported than current finding. These differences in the prevalence rate of occupational injury might be due to the differences in safety concern of managers and workers, lack of safety training and awareness; and limited occupational safety and health services practices.In contarary the current finding is lower than study done in Ghan 64%(Suguna *et al*., 2017) , Nigeria 48.5 %(Salamatu, 2015), in Addis Ababa among large scale manufacturing industry 48.9 %(Yitagesu *et al*., 2014) in Addis Ababa among tannery industry 45%(Yewaydemam,2012).This difference might be due to variation pattern of PPE utilization as this finding shows PPE utilization is 62%.

Also the study find out the leading cause of occupational injury among manufacturing industry workers were hurt by machine, followed by handtool and collision with objects. This could be due to presence of unguarded machine part, manula handling of activities and not using of PPE always on duty. The study indicates that cut, abrasion, puncture, and dislocation were the most type of injury reported.The study also revealed that hand, finger, lower leg , eye injury and back were the most parts of body affected. The possible explanation is due to more involvement in work which has direct exposure to machines,handtool and can be affected by injuries.These findings are consistent with studies conducted in India,(Suguna *et al*., 2017) , Arbaminch textile industry (Gebremichael et al., 2015) (,Kombolcha Textile(Yussuf *et al*. ,2013) and Addis Ababa

large scale metal manufacturing industries(Yitagesu *et al*., 2014). In addition literature revealed that the stated findings are common in work related injury(Gebremichael et al., 2015, (Yussuf *et al*. ,2013),(Suguna *et al*., 2017).

Most researchers showed that several factors were related to the occurrence, cause and types of injuries.Socio-demographic factors, working environment variables, worker's behaviour are the possible risk factors for workers to be injured in workplace in manufacturing industries(Abera *et al*.,2014) (Yitagesu *et al*.,2014).This study shows male are 2 times more likely to injured than female workers. This finding is similar with study conducted in Addis Ababa (Yitagesu *et al*.,2014, Hanna *et al*,2017 and Zeleke,2015). This might show heavy,hazardous work in manufacturing industry were more done by male; male workers were more expose to substance abuse like alcohol and khat, and also female workers could take their health and safety responsibility, use PPE than males. Another important finding of this study was the employee with low monthly income were 4 times more likely to be injured compared to workers earning average monthly of 2500-3500 ETB per months. Similar with study done in Arbaminch in 2015 that explained as higher payment is related with high experience and higher educational status although this factor was significant in this study and workers with lower experience and educational status are usually placed on machines and work on heavy object(Gebremichael et al., 2015). Some findings showed that age is significantly associated with magnitude of occupational injuries in which all showed the younger the age group the greater injury rate in Nigeria (Salamatu, 2015), incontrast ; this study showed that age is not significantly associated with occupational injury. Educational status is also was not significantly associated with magnitude of occupational injuries when adjusted all variables of interest.This implied that education may not a guarantee for not being injured but safe practice.

Regarding working environment related factors workers who worked more than 48 hour per week were 9 times more likely to be injured than workers who spend their time in the work place for 48 hours and less.This finding was consistent with findings study conducted in Gambela (Daniel and Birhanu, 2017) study in Addis Ababa(Yitagesu *et al*., 2014).This might be due to the excessive tiredness connected to such relatively long work hours also working for additional payement after they finish their daily quoat.Occupational injury were 3 times significantly higher

among employee who their work had involved in manual handling of activities compared to their counterpart.Evidences from literatures shows the activities involving manual handling of heavy objects exposes workers to injury (Gebremichael *et al*., 2015).Supervision,safety and health training did not show significant association when it is adjusted for all variables. However, this study is not consistent with other findings(Asrat and Dagnachew,2017),(Daniel and Birhanu ,2017, (Yitagesu *et al*., 2014).This could be those workers who were not injured might respond as if they did not take due to the logic that they perceived they will supervised and will take training if they say no. Use of PPE always was found to be significantly associated with ocupational injury in bivariate analysis,but did not show significant association when adjusted for all variables.Even though use of PPE did not show in multivariable analysis when added with the other the workers who reported that they use PPE; did not use all types of PPE, only use of some types, and not use always due to no access, PPE cannot prevent from occupational injury.This is consistent with study done in Arbamnich (Gebremichael *et al.*, 2015).

All behavioural related factors were significantly associated with magnitude of occupational injury in bivariate analysis and when adjusted for all variables.This study indicate that workers who use substance abuse were two times more likely to be injured than those who do not use or consume. It is consistent with study in Addis Ababa(Yitagesu *et al*., 2014),Gambella((Daniel and Birhanu ,2017),Arbaminch(Gebremichael *et al*., 2015)among manufacturing industries. This might be due to the fact that smoking and drinking are proxy indicators of a certain degree of risk tolerance, a high blood level of such substances during work will endanger both safety and efficiency, and be the cause of increased likelihood of mistakes, poor decision making, and errors in judgment (Yitagesu *et al*., 2014).

5.1 Limitation Of Study

- The study was a one -year cross sectional studies recall biases may occur
- The study was' nt find fatality and severe injuries occurred within the past one year due to data collectors was not find the severely injured workers because they may be in hospitals as well as in their home.
- Occupational disease was'nt includes in this theis, due to one year period prevalence study, that may need exposure assessment and laboratory tests.

6. Conclusions and recommendations

Conclusions

The study shows prevalence of ocupational injury in manufacturing industry was high when compared to some industries.Thus it has a significant public health concern in study area.Among studied variables; sex, salary, working hours, manul handling and substance abuse were significantly associated with ocupational injuries.Thus efforts should be made to address the alterable factors.

Based on the findings of the study the following Recommendations are forwarded:

- Modjo town labor and social affairs office and Modjo town Health office should have an integrated supervision and follow up on manufacturing industry to reduce ocupational injury.
- The Manufacturing industry managers should assign public health or occupational health and safety professionals for monitor working site that will important for reinforce and remind the basic health and safety matters fulfillment.
- Promoting work by shift or reducing prolonged duration of working hours is mandatory issue since working hours is siginificantly associated.
- provide adequate ,quality PPE and promote the use of personal protective equipment all times had significantly contribute to reduce risks of occupational injuries.
- Practicing work shift or rotation and reducing exposure time on work related to those activities invlove manually.
- Comparative studies are recommended to examine which industries high injuries than others.

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7. APPENDIXES

Annexes I: Informed Voluntary Consent form for Heads of Institutions

My name is ----------. I am working as a data collector for the study being conducted by Tadesse Tolera who is studying for his Master's degree in Public Health at Haramaya University, College of Health and Medical Sciences. I kindly request you to give me your attention to explain you about the study and your institution being selected as the study setting.

The study title: Prevalence of occupational injury and associated factors among manufacturing industry workers in modjo town, central Ethiopia

Purpose/aim of the study: The findings of this study can be of a paramount importance for the industry to plan intervention programs to prevent occupational injury in your industry and improve your productivity.Moreover, the aim of this study is to write a thesis as a partial requirement for the fulfillment of Master's program in General Public Health for the principal investigator.

Procedure and duration: I will be interviewing workers using a questionnaire to provide me with pertinent data that is helpful for the study. There are 50 questions to answer where I will fill the questionnaire by interviewing you. The interview will take about 20-30 minutes, so I kindly request you to spare me this time for the interview.

Risks and benefits: The risk of being participating in this study is very minimal, but only taking few minutes from workers time. There would not be any direct payment for participating in this study. But the findings from this research may reveal important information for the workers as well as for the health planners.

Confidentiality: The information you will provide us will be confidential. There will be no information that will identify you in particular. The findings of the study will be general for the study community and will not reflect anything particular of individual persons or housing. The questionnaire will be coded to exclude showing names. No references will be made in oral or written reports that could link participants to the research.

Rights: Participation for this study is fully voluntary. The participants have the right to declare to participate or not in this study, if they decide to participate they have the right to withdraw

from the study at any time and this will not label you for any loss of benefits which you otherwise are entitled. You do not have to answer any question that you do not want to answer.

Contact address: If there are any questions or enquires at any time about the study or the procedures, please contact the principal investigator Tadesse Tolera through cell phone number **0912725478,** through email at tadesset300@gmail.com **or** the Institutional Health Research Ethics Review Committee **(IHRERC)** at office phone **02 54 66 2011 or P.O.BOX 235**, **Haramaya University Harar Ethiopia.**

Declaration of Informed Voluntary Consent:

I have read the participant information sheet. I have clearly understood the purpose of the research, the procedures, the risks and benefits, issues of confidentiality, the rights of participating and the contact address for any queries. I have been given the opportunity to ask questions for things that may have been unclear. I was informed that the industry has the righty to withdraw from the study from being conducted if any misdeeds and unethical procedures are observed during the data collection process in the industry premises . Therefore, I declare my voluntary consent on behalf of _____industry management to allow this study to be conducted in the hospital with my signature

Name and signature of head of industry----------

Name and signature of data collector----------

Annexes II: Participant Information Sheet and Informed Voluntary Consent form

My name is ----------. I am working as a data collector for the study being conducted by Tadesse Tolera who is studying for his Master's degree in Public Health at Haramaya University, College of Health and Medical Sciences. I kindly request you to lend me your attention to explain you about the study and being selected as the study participant.

The study title: Prevalence of occupational injury and associated factors among manufacturing industry workers in modjo town, central Ethiopia

Purpose/aim of the study: The findings of this study can be of a paramount importance for the industry to plan intervention programs to prevent occupational injury in your industry and improve your productivity. Moreover, the aim of this study is to write a thesis as a partial requirement for the fulfillment of Master's program in General Public Health for the principal investigator.

Procedure and duration:I will be interviewing you using a questionnaire to provide me with pertinent data that is helpful for the study. There are 50 questions to answer where I will fill the questionnaire by interviewing you. The interview will take about 20-30 minutes, so I kindly request you to spare me this time for the interview.

Risks and benefits: The risk of being participating in this study is very minimal, but only taking few minutes from your time. There would not be any direct payment for participating in this study. But the findings from this research may reveal important information for the workers as well as for the industry.

Confidentiality: The information you will provide us will be confidential. There will be no information that will identify you in particular. The findings of the study will be general for the study community and will not reflect anything particular of individual persons or housing. The questionnaire will be coded to exclude showing names. No references will be made in oral or written reports that could link participants to the research.

Rights: Participation for this study is fully voluntary. You have the right to declare to participate or not in this study. If you decided to participate, you have the right to withdraw from the study at any time and this will not label you for any loss of benefits which you otherwise are entitled. You do not have to answer any question that you do not want to answer.

Contact address: If there are any questions or enquires at any time about the study or the procedures, please contact the principal investigator Tadesse Tolera through cell phone number **09 12725478,** through email at tadesset300@gmail.com **or** the Institutional Health Research Ethics Review Committee **(IHRERC)** at office phone **02 54 66 2011 or P.O.BOX 235**, **Haramaya University Harare Ethiopia.**

Declaration of Informed Voluntary Consent:

I have read/ was read to me the participant information sheet. I have clearly understood the purpose of the research, the procedures, the risks and benefits, issues of confidentiality, the rights of participating and the contact address for any queries. I have been given the opportunity to ask questions for things that may have been unclear. I was informed that I have the right to withdraw from the study at any time or not to answer any question that I do not want. Therefore, I declare my voluntary consent to participate in this study with my signature.

Name and signature of participant----------

Name and signature of data collector----------

Annexes III: Questionnaires (English Version)

Questionnaire for the assessment of occupational injury and associated factors among manufacturing industry workers in Modjo town,Ethiopia.

Manufacturing industry type_____M.industry code _____Participant ID Number ----------

Instructions: ask the question one by one as written in this questionnaire and circle the responses of participant under the response provided.

Section 1: Sociodemographic Information

S/N	Questions	Response	Skip	Code
Q101	Sex	1.Male 2.Female		C1
Q102	Age	--------years		C2
Q103	Religion	1. Orthodox 2.Muslim 3.Protestant 4.Catholic 99.Others,please specify----------		C3
Q104	Current Marital status	1.Single 2.Married 3.Divorced 4.Separated 5.Widowed		C4
Q105	Ethnicity	1.Oromo 2.Amhara 3.Gurage 4.Tigrai 5.Wolaita 99.Others,please specify--------		C5
Q106	Educational level	1.Cannot read and write 2. Can read and write 3. Primary school (1-8) 4. Secondary school (9-12) 5. Graduated from Technical and Vocational school 6. Diploma 7. First degree 8. Second degree		C6
Q107	Monthly salary	----------Birr per month		C7
Q108	Pattern of employment	1.permanent 2.temporary		C8
Q109	Total service duration in industries	----------years		C9
Q110	Service duration in the same job	----------years/month		C10
Q111	Are you satisfied by your current job	1.yes 2.no		C11

Section 2: information on occupational injury

S/N	Questions	Response	Skip	Code
Q201	Have you had an incident at work that resulted injury to you in the last12 months	1.yes 2.No	Skip to section 3 if the answer is' No"	S1
Q202	Have you had an incident at work that resulted injury to you in the last 2 weeks?	1.yes 2.no		S2
Q203	If yes to Q 201 how many times	1.once 2.more than once		S3
Q204	Parts of body affected			S4
	1.eye	1.yes 2.no		
	2.tooth	1.yes 2.no		
	3.hand	1.yes 2.no		
	4.ear	1.yes 2.no		
	5.knee	1.yes 2.no		
	6.toe	1.yes 2.no		
	7. Finger	1.yes 2.no		
	8. Head	1.yes 2.no		
	9. Upper Arm	1.yes 2.no		
	10. Lower Arm	1.yes 2.no		
	11.Hip	1.yes 2.no		
	12. Upper Leg	1.yes 2.no		
	13. Lower Leg	1.yes 2.no		
	14. Back	1.yes2.no		
	15. Chest	1.yes 2.no		
	16. Multilocation	1.yes 2.no		
	17.Other specify	_____		
Q205	Type of injury			S5
	1. Abrasion	1.yes 2.no		
	2. Cut	1.yes 2.no		

	3. Burn	1.yes 2.no		
	4. Puncture	1.yes 2.no		
	5. Fracture	1.yes 2.no		
	6. Dislocation	1.yes 2.no		
	7. Eye injury	1.yes 2.no		
	8. Ear injury	1.yes 2.no		
	10. Electrocutions	1.yes 2.no		
	11. Amputation	1.yes 2.no		
	12. Poisoning	1.yes 2.no		
	13. Other, specify	_____		
Q206	What was your reason(s) at, the time of injury?	1.I was new for the work process 2. Thinking about private affairs 3. Due to other medical problem 4. I think accident is beyond control 5. It is the working behavior 6. It is due to not using PPE 7. I don't remember 99. Others (specify		S6
Q207	Working condition	1.At height 2.Ground 3.Both 4.underground		S7
Q208	Causes of injury			S8
	1. Machinery	1.yes 2.no		
	2. Hit by Falling objects	1.yes 2.no		
	3. Hit	1.yes 2.no		
	4. Electricity	1.yes 2.no		
	5. Splintering objects	1.yes 2.no		
	6. Hand tools	1.yes 2.no		
	7. Fire	1.yes 2.no		

	8. Hot substances	1.yes 2.no		
	9. Falls	1.yes 2.no		
	10. Collision with objects	1.yes 2.no		
	11. Lifting heavy objects	1.yes 2.no		
	12. Other, specify			
Q209	Day of injury			S9
	1.Monday	1.yes 2.no		
	2.Tuesday	1.yes 2.no		
	3.wednsday	1.yes 2.no		
	4.Thursday	1.yes 2.no		
	5.Friday	1.yes 2.no		
	6.Saturday	1.yes 2.no		
	7.Sunday	1.yes 2.no		
Q210	Time of injury			S10
	1.morning	1.yes 2.no		
	2.afternoon	1.yes 2.no		
	3.evening	1.yes 2.no		
	4.midnight	1.yes 2.no		
Q211	Have you hospitalized as result of injury in the last 12 Month	1.yes 2.no	If no skip to section 3	S11
Q212	If Yes Q. 210, for how long	1. less than 24hrs 2. more than 24hrs		S12

Section 3: working environment related variables

S/N	**Questions**	**Responses**	**Skip**	**Code**
Q301	Hours worked per week	_____		E1
Q302	Regular health and safety supervision	1.yes 2.no		E2
Q303	Have you had safety training in Connection with new employment, equipment, or Work Process?	1.yes 2.no		E3

Q304	Does your work involve manual handling activity (pulling, pushing, carrying, and lifting)?	1.yes 2.no	If no skip to 307	E4
Q305	If yes for Q304 On average how much weight did you handled per day?	1.light (not greater than 5kg) 2. medium (6-25kg) 3. heavy (25-50)kg) 3.very heavy (greater than 50kg)		E5
Q306	On average how much time did you spend at this work per day	1. Not more than 2 hours. 2. 4.hours 3. 4 hours and above		E6
Q307	Did your work need visual concentration?	1.yes (<=50cm)2.no(>50cm)		E7
Q308	Do you use vibrating tools at your work place?	1.yes 2.no	If no skip to 310	E8
Q309	If your answer for Q308 is yes for how long per day	1.Not greater than 1 hour 2. 2-4 hours 3. greater than 4 hours		E9
Q310	Are machines you are working with always guarded or installed With safety devices?	1.yes 2.no		E10
Q311	Are machines you are working withal ways maintained Immediately when old or unsafe?	1.yes 2.no		E11
Q312	are there functional danger sign in your working room	1.Yes 2.no		E12

Section 4: Availability and utilization of personal protective measure

S/N	**Questions**	**Responses**	**Skip**	**Code**
Q401	Do you use any PPE while you are on work?	1.yes 2.no	If no skip to Q406	H1
Q402	If yes to Q401 what type?			H2
	1.Gloves	1.yes 2.no		
	2.Ear plug	1.yes 2.no		

	3.Respirators	1.yes 2.no		
	4.Helmet	1.yes 2.no		
	5.Overalls	1.yes 2.no		
	6.Goggles	1.yes 2.no		
	7. Face shield	1.yes 2.no		
	8. Boots/safety shoes	1.yes 2.no		
	9.Others, specify	_____		
Q403	If yes to Q401,do you use PPE all the time while on working	1.yes 2.no	If yes to Q403 skip to Q 405	H3
Q404	If No to Q403, what are the reasons not use safety equipments all the time? (more than one answer is possible	1. Not to fill discomfort 2. To safe time 3. Not aware of risk 4.careless/negligence 5. No access		H4
Q405	From where do you get PPE? (more than one answer is possible)	1.It is supplied by institution 2. You buy it for your self 99. Others, specify		H5
Q407	Have you ever had on job training on any type of occupational safety issues?	1.yes 2.no	If no skip to section 5	H7
Q408	If yes to Q407, from where did you get? (more than one answer is possible	1. From institution 2.From NGOs		H8

Section 5: **Workers behavior and characteristic**

S/N	**Questions**	**Responses**	**Skip**	**Code**
Q501	Do you smoke cigaratte?	1.yes 2.no	If no Q501 skip to Q503	L1
Q502	If yes for Q501, how often?	1.Every day 2.1-3 days/ week 3.Ocassionally		L2

Q503	Do you drink alcohol?	1.yes 2.no	If no skip to Q505	L3
Q504	If yes to Q503, how Often?	1.Every day 2.1-3 days/ week 3.Ocassionally		L4
Q505	Do you chew khat?	1.yes 2.no	If no skip to Q507	L5
Q506	If yes to Q505, how Often	1.Every day 2.1-3 days/ week 3.Ocassionally		L6
Q507	Do you have any sleeping disorders	1.yes 2.no		L7
Q508	If yes to Q507, what is the reason	1. Working greater than 8 hours without Shifting 2. Working in evening 3. Trying to work more than one task at a time 4. Excessive heat 99. Others, Specify___		L8

That is the end of our questionnaire. Thank you very much for taking time to answer these Questions.

Annexes IV: Participant Information Sheet and Voluntary Consent (Afaan Oromo Version)

Ibsa waaraqqa hirmaattotaa fi feedhumaa isaani ibsu

Maqaan koo Obbo/Aadde ---------- jedhama. Qorannoo hojjiin wal qabatee miidhaa hojjettoota warshaa kessan hojjetan qaqqabuu fi wantoota miidhaa kana waalin hidhaata qabani kan hojjettota warshaa adda adda Magaala Mojoo kessaa hojjetan irratti geggefamuu kana irratti ani akka oddefannoo saassabdu tokkotin tajaajila. Qorannon kun kan rawwatamu Haraamaya Univarsititti fayya haawasumaan digiiri lamaffaa barachaa kan jiru obbo Taaddasaa Toleeraa kan jedhamuuni. Hirmaana keessani argisisuun yeroo muraasaf akka yaada keessani naaf kennitanif kabaajan isin gaffadha.

Mata-duree qorannoo: Faca'insa miidhaa hojjin walqabatee umamuu fi wantoota miidhaa kana waalin hidhaata qabani kan hojjetoota warshaa magalaa mojoo kessaa hojjetani irratti geggefamuu dha.

Kayyoo qorannoo kana: Argannoon qorannoo kana irraa argaamu wajjiiri Hawasumaa fi hojjeta magaala mojoo akka ittisaa fi to'annaa miidhaa hojjii waliin walqabatu irratti xiyyeeffatu gargaara. Kara biroon immoo qoraata kuni waaraqa qorrannoo kana dhiyeesse akka fayya haawasumaan digiiri lamaffaatin eebbifaamuf gargaraa.

Adeemsa qorannoo fi yeroo: Gaffilee bareeffamani naaf kennaman kanani gaaffi fi deebi waalin tasaasifnu kuni qorannoo kanaf bu'a qaba. Gaffillee 50 qofatu jiruu, gaffilee kana daaqiqaa 20 hanga 30 keessatti ni xumuraa. Kanafuu yeroo xiqqoo kana akka naaf gummachitani kabajaan isin gafaadha.

Midhaa fi bu' aa qorannicha: Midhaan qorannoo kana irraa nama mudaachu danda'u yeroo keessan xiqqoo kan fudhaatu irra kan hafee baay'ee xiqqoo dha. Qoranno labooratorif dhigaa keessani akka kennitanif hin gaffatamtani. Kanan duraa miidhaan hojjii irraatti isiin qunname yoo jiraate qofa nuti himtu

Qorannoo kana irratti hirmaachu keessanif kaffaltin addaa isinif kaffalaamu hin jiru. Garuu argannoon qorannoo kana irraa argamuu ummaata fi karoorsituu fayyaa nannoof odeeffannoo gaaggari ni kenna.

Eeggannoo odeffannoo fi hirmaatootaf godhamu: Odeffanoon keessani nama kamiffu dabarfaamee hin kennamu. Odeeffanoon kamiyyu eenyumaa hirmaatoota kan addaa basuu hin jiru. Tokkoon tokko hirmaatoota kophaa isani bakka namni odeffannoo isaan hin dhageenyetti gaaffi fi deebbi godhu.

Argannon qorannoo kana hojjettota warhaa addaa addaa mojoo kessaa hojjetan mara bakka tokkotti kan addaa basuu malee tokkoo tokkon hirmaatoota kan addaa basuu miti. Gaffileen hirmaatotni gafaataman hunduu maqaa hirmaatota akka qabaneef kooddi godhamaani jiru. Afaaninis ta'e bareeffamani kan hirmaatotaa qorannoof wabii godhamuu hin jiru.

Mirgaa hirmaatoota: Hirmanaan qorannoo kanaf godhamuu hunduu fedhii hirmaatotatin qofa. Qorannoo kana irratti hirmaachuf yookin dhisuuf mirgaa guutu qabdani. Yoo qorannoo kana irratti hirmaatani, yeroo kamittu gaffi fi deebi kana addaan kuutuf mirgaa qabdu. Sababi addan kuutanif waanti midhaani isinirra gahuu yookin bu'aan isin dhabdaani gonkumaa hin jiru. Bakka deebi kennu hin barbaadneetti deebi kennu dhisuun ni danda'ama.

Teessoo qunnamtif: yoo gaaffi dabaalata qabaatanif yeroo kammiyyuu teessa armaan gadiitin nuu qunnamuu dandeessu. Qorataa jalqaaba: obbo **Taaddasaa Toleeraa**, lakkofsa mobaayila; **0912725478** yookin kara imeelitin tadesset300@gmail.com qunnamuu dandeessu. Yookin **koree saakkatatuu namuusa fi namumaa qorannoo fayyaa kan haramayaa Univarsiti** lakkoofsa bilbilaa, **02 54 66 20 11**; lakkofsaa sanduqaa postaa **235**, Haramayaa Univaarsiti Harar Itiyoophiyaa.**Mirkaannessa yaada feedhumaan hirmaachuf itti himaamee:**Yaadollee armaan olitti dubbiseef yookin natti himaamef, ani akka gaaritti waa'ee kayyoo qorannoo kana, adeemsa fi yeroo qorannoo kana, midhaa fi bu'aa qorannoo kana, eeggannoo odeeffannoo fi hirmatootataf godhamuu, mirgoota hirmaatota fi tessoo qunnamiti qorannoo kana addaa bafaachu kootif. Akkasumaas bakka naaf hin gaalle irratti gaaffi akkan gafaadhuf carraa akkan qabuu fi yeroon barbaadeetti gaaffi fi deebii addaan kuutu akkan danda'u, gaaffi deebi kennuf hin barbaannef irraa darbuu akkan qabuu sirritti addaan baafadhee jira. Kanafuu qorannoo kana irratti hirmaachuf yaada fedhuuma kooti mallattoo kiyyan ni mirkaannessa.

Maqaa fi mallattoo hirmaata/ttu----------

Maqaa fi mallattoo odeeffanno sasaabduu----------

Annexes V: Questionnaire (Afaan Oromo Version)

Gaaffilee Qorannoo facainsa miidhaa hojjin walqabatee umamuu fi wantoota miidhaa kana waalin hidhaata qabani kan hojjetoota warshaa magalaa mojoo kessaa hojjetani irratti geggefamuu dha

Gosa Warshaa _____koodii warshaa_____Lakkoofsa eenyumma hirmaatota --------

Qajeelfama : Gaffilee armaan gaadif osoo irraa hin hir'isni yookin itti hin dabaalin tokko tokkoon hirmaatoota gaffachuun deebi isaani bakka sif kennameeti guuti yookin itti naanneesi.

Kutaa1: Odeeffannoo haala uummata ibsu

T/L	Gaaffi	Deebi	darbi	Kooddi
L101	Saala	1.Dhiiraa 2.Dhala		C1
L102	Umuriin kee meeqa?	Waagga ----------		C2
L103	Amantaa	1.Orthodoksii 2.Musilima 3.Protestantii 4.Katolikii 99.Kan biro maaloo addda basii_____		C3
L104	Haala fuudha fi heerumaa?	1.Kan hin fuudhne/ hin heerumnee 2.Kan fuudhe/heerumee 3.Kan waali hikkani 4.Kan addaan bahani 5.Kan irraa du'e/duute		C4
L105	Saabni kee maali?	1.Oroomo 2.Amaara 3.Gurage 4.Tigray 5.Walayita99.Kan biroo, maloo addaa basi himi------		C5
L106	Sadaarkan barnoota kee kami?	1.Kan dubbisuf barressu hin dandenye 2.Kan barressuf dubbisu dandaú 3.Sadarkaa tokkoffa kan barate(1-8) 4.Kan hanga sadarka (9-12)baratte 5.Kan Tekinikaa ogummaa irraa ebbifame 6.Dipplomaa 7.Digrii jalqaba 8.Digrii lammaffaa		C6
L107	Akka mallaqaa itiyoophiyaatti gaalin maati kee jiáan argaata	----------ETB jiáan		C7

	jiru meeqa?			
L108	Gosa hojii	1..dhabbii 2.Kontiraata		C8
L109	Bara tajajila	_____waggaaa		C9
L110	Bara tajajila hojii walfakkatu irraatti	_____waggaa		C10
L111	Hojjii amma hojjechaa jirtuti itti quuftee jirta	1.eyyee 2.lakki		C11

Kutaa 2 :odeffannoo miidhaa hojjii irraatti uymamuu ittin funanamu

T/L	Gaaffi	Deebi	Bira darbi	Kooddi
L201	jióota 12'n darbanitti ossoo hojji hojjettani balaan miidhaan gessise isin irraa gahe jiraa	1.Eyyen 2.Lakki	Yoo deebiin kee lakki taé Kutaa 3ffatti darbi.	S1
L202	torbee 2'n darbanitti ossoo hojji hojjettani balaan miidhaan gessise isin irraa gahe jiraa	1.eyyen 2.Lakki		S2
L203	Yoo gaaffii armaan olii eye jettan yeroo meeqa	1.Tokkoo 2.tokko ol		S3
L204	Qaama midhaame			S4
	1.ija	1.eyyen 2.Lakki		
	2.ilkaan	1.Eyyen2.Lakki		
	3.harka	1.Eyyen 2.Lakki		
	4.gurraa	1.Eyyen 2.Lakki		
	5.jilbaa	1.Eyyen 2.Lakki		
	6.quba miillaa	1.Eyyen2.Lakki		
	7. quba harkaa	1.eyyen 2.Lakki		
	8. mataa	1.eyyen 2.Lakki		
	9. irree olii	1.eyyen 2.Lakki		
	10. irree gadii	1.eyyen 2.Lakki		
	11.luqqettuu	1.eyyen 2.Lakki		
	12. miillaa olii	1.eyyen 2.Lakki		

	13. miilla gadii	1.eyyen 2.Lakki		
	14. dugda	1.eyyen 2.Lakki		
	15. laphee	1.eyyen 2.Lakki		
	16.iddoobaayee	1.eyyen 2.Lakki		
	17.kan ala yoo taé maaloo	_____		
L205	akaakuu miidhaa			S5
	1. riguu/gogaa quncisuu	1.eyyen 2.Lakki		
	2. muraa	1.eyyen 2.Lakki		
	3. gubaa	1.eyyen 2.Lakki		
	4. waraansa/tarsasuu	1.eyyen 2.Lakki		
	5. caba	1.eyyen 2.Lakki		
	6. waljala darbuu/buqqaáa	1.eyyen 2.Lakki		
	7. miidhaa ijaa	1.eyyen 2.Lakki		
	8. miidhaa gurraa	1.eyyen 2.Lakki		
	10. miid	1.eyyen 2.Lakki		
	11. citaa qaama	1.eyyen 2.Lakki		
	12. qorichaan	1.eyyen 2.Lakki		
	Kan biro o maaloo yoo jirate	_____		
L206	yeroo balaan sirraa gahe sanatiit sababiin umamuu miidhaa maal jette yaada	1.adeemsa hojjichaaf haaran ture 2. dhimma dhunfaan yaada ture 3. rakkoo fayyaa koo durani 4. balaa toáchuu hin dandenye human koo olii. 5. amaluma hojjichaatti 6. uffata ittisa waan hinuffaneefi 7. hin yaddadhu		S6

		99. kan biro yoo taé maaloo----------		
L207	Haalii hojjii kee	1.fagenyaa irraa 2.lafa 3.lamenuu 4.lafa jala		S7
L208	Sababii miidhaa			S8
	1. Mashinii	1.eyyen 2.Lakki		
	2.meshaa olii kufeen rukkutamu	1.eyyen 2.Lakki		
	3. rukkuttaamu	1.eyyen 2.Lakki		
	4. Elektrikii	1.eyyen 2.Lakki		
	5. meeshaa qara qabu	1.eyyen 2.Lakki		
	6. meeshaa harkaa	1.eyyen 2.Lakki		
	7. ibbida	1.eyyen 2.Lakki		
	8. meshaa hoáa	1.eyyen 2.Lakki		
	9. kufaatti	1.eyyen 2.Lakki		
	10. walitti bu’nsa wantaa waliin	1.eyyen 2.Lakki		
	11. meeshaa olkaasuuf	1.eyyen 2.Lakki		
	12. maaloo kan biro yoo jiraate	_____		
L209	Guyyaa miidhaan gahee			S9
	1.Wixata	1.eyyen 2.Lakki		
	2.kibxata	1.eyyen 2.Lakki		
	3.Roobii	1.eyyen 2.Lakki		

	4.kamisa	1.eyyen 2.Lakki		
	5.jimaata	1.eyyen 2.Lakki		
	6.kidamee	1.eyyen 2.Lakki		
	7.Sanbtaa guddaa	1.eyyen 2.Lakki		
L210	Saá miidhaan qaqqabe			S10
	1.ganama	1.eyyen 2.Lakki		
	2.saá booda	1.eyyen 2.Lakki		
	3.galgala	1.eyyen 2.Lakki		
	4.halkan	1.eyyen 2.Lakki		
L211	walansaa argatee yeroo miidhaan sirraa gahe.	1.eyyen 2.Lakki	Lakki yoo jette kutaa 3 ffati darbi.	S11
L212	Gaaffii armaan olii eyyeen yoo jettan hangam turtan	1. saá 24 gadi 2. saá 24 oli		S12

Kutaa 3 :Gaaffilee Nannoo hojjii kessaan walqabatan

T/L	**Gaaffii**	**Deebii**	**darbi**	**kooddii**
L301	Torbeeti saá hojjii	_____		E1
L302	Hordoffi fi toánnoon fayyuma fi nagenyaa jira	1.eyyen 2.lakki		E2
L303	Leenjiin haala hojjii fi meeshaalee waliin walqaabte fudhatani beektuu	1.eyyen 2.lakki		E3
L304	Amali hojji kessani kallatuman harkaan qabatnit hojjettu(harkisu, dhiibuu, baachuu,fi olkaasuu)?	1.eyyen 2.lakki	Lakki yoo jette lakk 307tti darbi	E4
L305	Yoo eyyeen jetten Q304 ulfinni isaa tilmaaman hangam taá?	1.salphaa < 5kg) 2. giddugalessaa (6-25kg) 3. ulfaata (25-50)kg) 3.baayée ulfaata (>50kg)		E5
L306	Hojjii akkasii yeroo hojjetan saá meeqaaf hojjettu	1. saá 2 hin caaluu. 2. saá 4 3. saá 4 fi isaa ol		E6
L307	Hojjiin kee xiyyeefannon ilaaluu barbaada?	1.eyyen 2.lakki		E7

L308	Iddoo hojjii kessanniti Meeshaa nama hurgufuti ni fayyadamtuu?	1.eyyen 2.lakki	Lakkii yoo jette L310ti darbi	E8
L309	Yoo deebiin kessan lakkoffsa Q308 eyyen taé saá meeqaaf	1. saá 2 hin caaluu. 2. saá 4 3. saá 4 fi isaa ol		E9
L310	Mashini ati irraa hojjettu haalan hagugamaadha?	1.eyyen 2.lakki		E10
L311	Mashinini ati irraa hojjetuu yoo dullomee yeroon jijjiraama.ykn hojjetama	1.eyyen 2.lakki		E11
L312	Kutaa ati kessa hojjettu kessaa agarsiftuun kuni balaa qaba jedhu jiraa(danger sign)	1.eyyen 2.lakki		E12

Kutaa 4 :itti fayyadama PPE

T/L	**Gaaffii**	**Deebii**	**Bira darbi**	**Koddii**
L401	Yeroo hojjii hojjettu PPE (uwwisa seera) ni qabda?	1.eyyen 2.lakki	Lakki yoo jette lakkofsa Q406 darbi	H1
L402	Gaaffii Q401 eyyeen yoo jette akaakuu kami?			H2
	1.kan harkaa(glavii)	1.eyyen 2.lakki		
	2.kan gurraa	1.eyyen 2.lakki		
	3.kan afaanii(respirators)	1.eyyen 2.lakki		
	4.kan mataa(helmet)	1.eyyen 2.lakki		
	5.tuutaa(overalls)	1.eyyen 2.lakki		

	6.kan ijaa(Goggles)	1.eyyen 2.lakki		
	7. kan fuula(Face shield)	1.eyyen 2.lakki		
	8. miilaa/safety shoes	1.eyyen 2.lakki		
	9.maaloo kan biroon yoo jiraatee	_____		
L403	Lakkofsa Q401,eyyen yoo jette saáa hojjii irraa PPE yeroo hunda ni fayyadamtaa?	1.eyyen 2.lakki	Lakk Q403 eyyen yoo jette lakkofsa Q 405 darbi	H3
L404	Lakkofsa Q403, lakkii yoo jette sababii ati yeroo hunda hin fayyadamneef maaliif taá? (deebii tokko ol kennun ni dandaáma)	1. Natti hin tolu 2. saá qusachuuf 3. miidhaa sana booda jiru hin beekuu 4.xiyyeffannoo itti hin kennu 5. hin jiru		H4
L405	Uffata (PPE) essaa argatu? (deebii tokkoo ol kennuun ni dandaáma)	1.dhabbatatu nuuf kenna 2. dhuunfaa keenyaan bitana 99. maaloo kan biroo yoo jiraate_____		H5
L406	Jalqabaa guyyaa hojjii qaccaramtu leenjiin waée nageenya fi fayyumaa kessanii irratti isiniif kennamee jira?	1.eyyen 2.lakki		H6
L407	leenjiin hojjii irraa waée nageenya fi fayyumaa kessanii irratti isiniif kennamee jira?	1.eyyen 2.lakki		H7
L408	Lakk Q407 Eyyeen yoo jettan , essaa argatan? (tokkoo ol deebisuun ni dandaáma)	1. dhabatichuma irraa 2.NGO irraa		H8

Kutaa 5 :Gaaffillee amala hojjetta waliin walqabate

T/L	Gaaffii	Deebii	Bira darbi	Koddii
Q501	Ni aarsitaa?	1.eyyen 2.lakki	Yoo deebiin kee lakki taé Kutaa 503ffatti darbi.	L1
Q502	Gaaffi lakk Q501,eyyen yoo jette hangamiin?	1.guyyaa guyyaan 2.guyyaa 1-3 3.Darbee darbee		L2
Q503	Ni dhugdaa?	1.eyyen 2.lakki	Yoo deebiin kee lakki taé Kutaa 505ffatti darbi.	L3
Q504	Gaaffii Q503, eyyeen yoo jette hangamiin?	1.guyyaa guyyaan 2.guyyaa 1-3 3.darbee darbee		L4
Q505	Jimaa ni qamaata?	1.eyyen 2.lakki	Yoo deebiin kee lakki taé Kutaa 507ffatti darbi.	L5
Q506	Gaaffii Q503, eyyeen yoo jette hangamiin	1.guyyaa guyyaan 2.guyyaa 1-3 3.darbee darbee		L6
Q507	Jeequmsi hirribaa qabdaa	1.eyyen 2.lakki	Yoo deebiin kee lakki taé Kutaa 509ffatti darbi.	L7
Q508	Gaaffii Q507, eyyen yoo jette sababiin isaa maal taá laata?	1. saá 8 ol ittifufinsan hojjechu 2. galgala hojjechuu 3. hojjii tokko ol hojjechuu 4. hoá cimaaf saaxilamu 99. maaloo kan biro yoo jiraate___		L8

Kun xummuraa gaaffii kootii yeroo kee naaf kennitee deebii kee naaf laachuu keetiif Galatoomii.

Annexes VI :Participant Information Sheet and Voluntary Consent

(Amaharic version)

በሀረማያዩኒቨርሲቲ በጤናና ህክምና ሳይንስ ኮሌጅ ፣የሕብረተሰብ ጤና ትምህርት ክፍል

ይህ መጠይቅ በሞጆ ከተማ ፋብሪካዎች ላይ ተቀጥረው በሚሰሩ ሰራተኞች ላይ የሚደርሱትን ከሙያ ጋር የተያያዙ ጉዳቶችን ና መንስኤዎቻቸዉን ለይቶ ማወቅ ይረዳ ዘንድ የተዘጋጀ መጠይቅ ሠራተኞች መረጃ መስጫ እና የተሳታፊዎች ፍቃደኝነት መጠየቂያ ቅፅ 2010ዓ.ም፡፡

ጤና ይስጥሌኝ የእኔ ስም----------ይባላል::የምሰራው መረጃ መሰብሰብ ሲሆን በተመረጡ ፋብሪካዎ ተቋማ ላሚደረገው ጥናት በሀረማያ ዩኒቨርሲቲ በጤናና ህክምና ሳይንስ ኮሌጅ የማስተርስ ዲግሪውን በምየጠናው በታደሰ ቶልራ ለሚሰራው መረጃ ሰብባቢነኝ፡፡ በዚህ ጥናት ላይ የሚሳተፍ ማንኛዉም ሰዉ ከዚህ በታች ስለ ጥናቱ የተሰጠዉን መረጃ በትክክል ተረድቶ ፍቃደኝነቱን ሲያሳይ ብቻ ነዉ፡፡

የጥናቱ ርዕስ :-

በ በሞጆ ከተማ ውስጥ በሚገኙ ፊብርካዎች የሚሰሩ ሰራተኞች ላይ የሚደርሱትን ከሙያ ጋር የተያያዙ ጉዳቶችን ና መንስኤዎቻቸዉን ለይቶ ማወቅ ነው፡፡

የጥናቱ ዋና ዓላማ :-

ፋብሪካ ሰራተኞች መካከል ያለውን የሥራ ላይ አደጋ መጠንና አጋላጮችን በማጥናት ለድህረ-ምረቃ

ትምህርት ማሚያነት ለመጠቀም ነው፡፡አንዲ ሠራተኛ ይህን መጠይቅ በመመለስ ስለተሳተፈ ቀጥተኛ የሆነ ጥቅም አያገኝም፡፡ የዚህ ጥናት ውጤት ለሚመለከታቸው አካሊት ሁለ የሚሰራጭ በመሆኑ በቀጣይ በሥራ ሊይ የሚደርስ አደጋ ለመከሊከሇ ከፍተኛ ሚና የሚጫወት በመሆኑ በተዘዋዋሪ ተጠቃሚ ይሆናሉ፡፡

የጥናቱ አካሄድ እና የጊዜ ገደብ

ይህን መጠይቅ በመጠቀም የተለያዩ ጥያቄዎችን እጠይቆታለሁ፡ ፡ የሚሰጡኝ ምላሽ ለጥናቱ በጣም አስፈላጊ ነው፡ ፡ መጠይቁ የሚይዘው 50 ጥያቄዎችን ሲሆን የሚፈጀው ጊዜ ደግሞ 20-30 ደቂቃ ነው፡ ፡ ስለዚህ ጊዜዎትን መስዋዕት አድረገ ው ምላሽ እንዲሰጡኝ በአክብሮት እጠይቃለሁ፡

በጥናቱ መሳተፍ ያለው ጥቅምና ጉዳት

በዚህ ጥናት ውስጥ መሳተፍ ያለው ጉዳት አነስተኛ ሲሆን ይሄውም ከስራ ሰዓትዎ ላይ የምወስደው ጥቂት ደቂቃዎች ብቻ መሆኑ ነ ው፡ ፡ ይህ ጥናት የአጭር ጊዜ የገንዘብ፣ የጤና እንክብካቤ እና የአቅም ግንባታ ጥቅማ ጥቅሞች ለተሳታፊዎች የሉትም። ነገር ግን በሂደት የጥናቱ ውጤት ለሚመለከተው ኣካልና ፖ/ሊሲ አውጪዎች ለፖ/ሊሲ ግብአትነት፣ አቅጣጫ እና ስትራቴጂ ቀረፃ ይረዳል። በይበልጥ ጥናቱ በመስኩ እንደ መነሻ መረጃ ሆኖ ያገለግላል።

ሚስጥራዊነ

ለዚህ ጥናት የሚሰጡኝ ምላሽ በማንኛውም ሁኔታ ሚስጥራዊነቱ የተጠበቀ ሲሆን የ እርሶን ምማንነት በፍፁም አይገለፅም፡ ፡ በጥናቱ የሚገኘው ውጤት በአጠቃላይ ህብረተሰቡን የሚመለከት ሲሆን የማንኛውንም ግለሰብ/ቤተሰብጉዳይ የሚነካ አይሆንም፡ ፡ እያንዳንዱ ጥያቄ የእርሶዎን ስም/ማንነ ት በማይገልፅሁኔታመለያ ይኖረዋል፡ ፡ ማንኛውም የፁሁፍ ወይም የ ቃል ሪፖርት በሚቀርብበት ጊዜ የእርሶን ማንነ ት በጥናቱ ውስጥ በማያሳይ መልኩ ይዘጋጃል፡:

መብቶች

በጥናቱ ላይ መሳተፍ በፍቃደኝነት ላይ የተመሰረተ ነው፡ ፡ ስለዚህ በዚህ ጥናት ላይ የመሳተፍ ወይም ያለመሳተፍ መብት አለዎት፡ ፡ በዚህ ጥናት ላይ ለመሳተፍ ከወሰኑ፤ ቃለ ምልልሱ ከተጀመረ በኃላ በማንኛውም ሰዓት ያልተመቾት ሁኔታ ሲኖር ማቋረጥ ይችላሉ፡ ፡ ይህን በማድረግዎ ምንም የሚደርስብዎት ችግር የለም፡ ፡ መመለስ የማይፈልጉት ጥያ ሲኖር በማንኛውም ሰዓት ያለመመለስ ይችላሉ::

አድራሻ : ስለ ጥናቱ ያለዎትን ማንኛውም ጥያቄ በሚከተለው አድራሻ መጠየቅ ይችላሉ የጥናቱ ባለቤት ታዳስ ቶልረ ስልክ ቁጥር፡ 0912725478

አድራሻ፡ሞጆ

ኢ-ሜይል፡ tadesset300@gmail.com

የተቋማት የጤና ምርምርና ስነ ምግባር ገምጋሚ ኮሚቴ አድራሻ፡ ስልክ 0254662011

የመ.ሣ.ቁ. 235 ሀረር

ፍቃደኝነትን ስለማረጋገጥ:

ከላይ የተዘረዘሩትን የመረጃ ቅፆች በሚገባ አንቢባለሁ ወይም ተነቦልኛል፡ ፡ በዚህም መሰረት የጥናቱ ዓላማ እና አካሄድ የሚያመጣው ጥቅምና ጉዳት፤ ሚስጥራዊነቱን፤በጥናቱ የመሳተፍ ወይም ያለመሳተፍ መብት እንዳለኝ፤በቃለመጠይቁ ወቅት

ያልተመቹኝ ነገሮች ሲኖሩ አቋርጬ መውጣት እንደምችል እና ያልተመቹኝ ጥያቄዎች ሲኖሩ ያለመመለስ መብት እንዳለኝ በሚገባ ተረድቻለሁ፡ ፡ በተጨማሪም በቃለ መጠይቁ ወቅት ግልፅ ያልሆኑልኝ ጥያቄዎች ሲኖሩኝ እንድጠይቅ እና ተጨማሪ ጥያቄዎች ሲኖሩኝ እንዲመለስልኝ አድራሻ ተሰቶኛል፡ ፡ስለዚህ በዚህ ጥናት ለመሳተፍ ሙሉ ፍቃደኝነቴን በፊርማዬ አረጋግጣለሁ፡ ፡

የተሳተፊው ስምና ፊርማ _____

የመረጃው ስብሳቢ ስምና ፊርማ _____

Annexes VII: Questionnaire (Amaharic Version)

በሞጆ ከተማ ውስጥ በሚገኙ ፊብርካዎች የሚስሩ ሰራተኞች ላይ የሚደርሱትን ከሙያ ጋር የተያያዙ ጉዳቶችን ና መንስኤዎቻቸዉን ለይቶ ማወቅ ነው።

የዳርጅቱ ታዬፕ_____ የዳርጅቱ ኮድ _____ የመጠይቁ መለያ ቁጥር_____

ክፍል አንድ፡-ማህበራዊናስነ-ሕዝባዊገጽታዎችንበተመለከተ(socio demographic information)

ተ/ቁ	ጥያቄዎች	አማራጭ መልሶች	ይሻገሩ	ኮድ
ቁ101	ፆታ	1. ወንደ 2. ሴት		C1
ቁ102	ዕዲሜ	--------		C2
ቁ103	ሐይማኖት	1) ኦርቶድክስ ክርስቲያን 2) ፕሮተስታንት ክርስቲያን 3) ካቶሉክ ክርስቲያን 4) ሙስሊም 99) ላለ. ----------		C3
ቁ104	የጋቢቻ ሁኔታ	1) ያላገባ 2) የገባ 3) ፈት 4) በሞት የታላይ5) ቦሎ የሞተባት ስት		C4
ቁ105	ብሔር	1. ኦሮሞ 2. አማራ 3.ትግሬ 4. ጉራጌ 5.ሥለይታ99. ሌላይጥቀሱ…		C5
ቁ106	የትምህርት ዳረጃ	1. መፃፍና ማንበብ የማይችል/የማትችል 2. መፃፍና ማንበብ የሚችል/የምትችል 3. የመጀመሪያ ደረጃ ት/ት (1-8) ያጠናቀቀ/ች 4. ሁለተኛ ደረጃ ት/ት (9-12) ያጠናቀቀ/ች 5. ከቴክኒክና ሙያ ትምህርት ቤት የተመረቀ/ች 6. ዲፕሎማ 7. የመጀመርያ ዲግሪ 8. ሁለተኛ ዲግሪ		C6
ቁ107	የወር ዳመወዝ	_____ETB		C7

ቁ108	የቅጥርሁኔታ	1. ቋሚ 2. ኮንትራት		C8
ቁ109	በድርጅቱየቆይታጊዜበአመት)	_____		C9
ቁ110	በዚህስራየቆይታጊዛ/በአመት)	_____		C10
ቁ111	በአሁኑ ጊዜ በስራዎ ደስተኛ ነዎት?	1. አዎን 2. የለም		C11

ክፍል 2፡ የሥራ ቦታ ጉዳትን በተመለከተ

ተ/ቁ	ጥያቄዎች	አማራጭ መልሶች	ይሻገሩ	ኮድ
ቁ201	ባለፉት 12 ወር ውስጥ ከሥራ ጋር በተያያዘ የደረሰብዎት ጉዳት አለ?	1. አዎን 2. የለም	የለም ካሉ ወደ ተ.ቁ 301 ይሻገሩ	S1
ቁ202	ባለፉት ሁለት ሳምንታት ውስጥ ከሥራ ጋር በተያያዘ የደረሰብዎት ጉዳት አለ?	1. አዎን 2. የለም	የለም ካሉ ወደ ተ.ቁ 204 ይሻገሩ	
ቁ203	201 አዎን ከሆነ ስንት ጊዜ?	1. አንድ ጊዜ ብቻ 2. ከአንድ ጊዜ በላይ		S3
ቁ204	በጉዳቱ የተጎዳው የሰውነት ክፍል			S4
	1.አይን	1. አዎን 2. የለም		
	2.ጥርስ	1. አዎን 2. የለም		
	3. እጅ	አዎን 2. የለም		
	4. ጆሮ	አዎን 2. የለም		
	5. ጉልበት	አዎን 2. የለም		
	6. የእግር ጣት	1.አዎን 2. የለም		
	7.እጅ ጣት	1.አዎን 2. የለም		
	8.ራስ	1.አዎን 2. የለም		
	9. የላይኛው ክንድ	1.አዎን 2. የለም		
	10. የታችኛው ክንድ	1.አዎን 2. የለም		
	11. ጭን	1.አዎን 2. የለም		

	12. ከጉልበት በታች ያለው	1.አዎን 2. የለም		
	13. እግር	1.አዎን 2. የለም		
	14. ጀርባ	1.አዎን 2. የለም		
	15. ደረት	1.አዎን 2. የለም		
	16.በተለያዩ የሰውነት ክፍሎች	1.አዎን 2. የለም		
	17. ሌላ ካለ ይጠቀስ			
ቁ205	የጉዳቱ አይነት			S5
	1.ጭረት	1.አዎን 2. የለም		
	2. መቆረጥ	1.አዎን 2. የለም		
	3. ቃጠሎ	1.አዎን 2. የለም		
	4.መወጋት	1.አዎን 2. የለም		
	5. ስብራት	1.አዎን 2. የለም		
	6. ወለምታ	1.አዎን 2. የለም		
	7. አይን ላይ የደረሰ ጉዳት	1.አዎን 2. የለም		
	8. ጆሮ ላይ የደረሰ ጉዳት	1.አዎን 2. የለም		
	10.በኤሌክትሪክ መያዝ	1.አዎን 2. የለም		
	11.የአካል መጉደል	1.አዎን 2. የለም		
	12. መመረዝ	1.አዎን 2. የለም		
	13. ሌላ ካለ ይጠቀስ	_____		

ቁ206	ጉዳቱ በደረሰበት ወቅት ምን ሲሰሩ ነበር	1) ለሥራው አዱስ በመሆኑ 2) ስለ ግሌ ሕይወት እያሰቡ ስለ ነበር 3) በላለ የጤና ችግር ምክንያት 4) አደጋን መከሊከል ስለ ማይቻል 5) የሥራው ባሕሪ ስለ ሆነ 6) የጉዲት መከሊከያ መሣሪያ ስሊሌተጠቀመ 7) የጉዲቱን ምክንያት አሊስታውስም 99) ላሊ ምክንያት ካለ ይጠቀስ …….		S6
ቁ207	የሚስሩበት ቦታ የት ነው	1.ከፍታ ቦታ/ፎቅ ላይ/ 2.መሬት/ምድር/ 3.ሁለቱም ቦታ 99.ላላ ካለ ይጠቀስ		S7
ቁ208	የጉዳቱ ምክንያት			S8
	1. ማሽኖች	1.አዎን 2. የለም		
	2.በሚወድቁ እቃዎች	1.አዎን 2. የለም		
	3. በመመታት	1.አዎን 2. የለም		
	4.ኤሌክትሪክ	1.አዎን 2. የለም		
	5. በተፈናጣሪ ነገሮች	1.አዎን 2. የለም		
	6. የእጅ መሣሪያዎች	1.አዎን 2. የለም		
	7. እሳት	1.አዎን 2. የለም		
	8. ትኩስ ነገሮች	1.አዎን 2. የለም		
	9. መውድቅ	1.አዎን 2. የለም		

	10. ግጭት	1.አዎን 2. የለም		
	11.ከባድ እቃዎችን በማንሳት	1.አዎን 2. የለም		
	12. ሌላ ካለ ይጠቀስ			
ቁ209	ጉዳቱ የደረሰበት ቀን			S9
	1.ሰኞ	1.አዎን 2. የለም		
	2.ማክሰኞ	1.አዎን 2. የለም		
	3.እሮብ	1.አዎን 2. የለም		
	4.ሐሙስ	1.አዎን 2. የለም		
	5.አርብ	1.አዎን 2. የለም		
	6.ቅዳሜ	1.አዎን 2. የለም		
	7.እሁድ	1.አዎን 2. የለም		
ቁ210	ጉዳቱ የደረሰበት ሰዓት			S10
	1.ጧት	1.አዎን 2. የለም		
	2.ከሰዓት	1.አዎን 2. የለም		
	3.ማታ	1.አዎን 2. የለም		
	4.ለሊት	1.አዎን 2. የለም		
ቁ211	በደረሰብዎት ጉዳት ምክንያት በጤና ተቋም ተኝተው ያውቃሉ?	1.አዎን 2. የለም	የለም ካሉ ወደ ክፍል 3 ይሻገሩ	S11
ቁ212	211 አዎን ከሆነ ለስንት ሰዓት	1. 24 ሰዓትና ከዚያ በታች 2. ከ 24 ሰዓት በላይ		S12

ክፍል 3፡ የስራ ቦታን በተመለከተ

ተ/ቁ	ጥያቄዎች	አማራጭ መልሶች	ይሻገሩ	ኮድ
ቁ301	በሳምንት ምን ያህል ሰዓት ይሰራሉ?	_____		E1
ቁ302	የሥራ ቦታ ደህንነትን በተመለከተ ቁጥጥር ይደረጋል?	1. አዎን 2. የለም		E2
ቁ303	የሥራ ቦታ ደህንነትን በተመለከተ አዲስ ሆነው ሲቀጠሩ ወይም በአዳዲስ አሰራሮች ወይም በሌሎች ለውጦች ምክንያት	1. አዎን 2. የለም		E3

	ሥልጠና ወስደው ያውቃሉ ?			
ቁ304	በስራ ቦታዎ ከፍተኛ ዕቃ የማንሳት፣ የማንገዝ፣ መግፋትና የመሸከም የመሳሰሉትን ስራ ያከናውናለ?	1. አዎን 2. ~~የለም~~	ወደቁ.307 ዝለል	E4
ቁ305	ለጥያቄ ቁ.304 መልሰዎ አዎ ከሆነ በቀን በአማካይ ምን ያህልክብደት ያነሳለ?	1.ቀላል (ከ5ኪ.ግ የማይበልጥ) 2. መካከለኛ(ከ6-10ኪ.ግ) 3. ከባድ (ከ11-20ኪ.ግ) 4.በጣም ከባድ (ከ 20ኪ.የሚበልጥ)		E5
ቁ306	በአማካይ በዚህ ስራ ላይ ለምን ያህልጊዜ ይቆያሉ?	1. ከ2 ሰአት ያነሰ 2. ከ2-4ሰአታት 3. ከ 4 ሰአታት በላይ		E6
ቁ307	ስራዎ የማየት ትኩረትን የሚሻ ነውን?	1. አዎ(ጥቃቅን ነገሮችን በትኩረትአመለከታለሁ ≤50ሴ.ሜ)2.አልመለከትም(ጥቃቅን ነገሮችን በትኩረትአልመለከትም>50 ሴ.ሜ)		E7
ቁ308	በስራ ቦታዎ እርግብግቢት ያለባቸውንመሳሪያዎች ይጠቀማሉ?	1. አዎን 2. ~~የለም~~	ወደቁ.310 ዝለል	E8
ቁ309	ለጥያቄ ቁ.308 መልሰዎ አዎ ከሆነ ለምንያህል ጊዜ?	1.ከ1 ሰአት አይበልጥም 2. ከ2-4 ሰአት 3. ከ 4 ሰአት በላይ		E9
ቁ310	ስራ በሚሰሩበት ጊዜ የሚሰሩበት ማሽን ከላል አለው?	1. አዎን 2. የለም		E10
ቁ311	ማሽኑ ሲበላሽ በወቅቱ ጥገና ይደረግለታል?	1. አዎን 2. የለም		E11

ቁ312	ሁሌ ጊዜ የሚሰሩ የአጭጋ ሁኔታን የሚገሌፁ ምሌክቶች አለ?	1. አዎን 2. የለም		E12

ክፍል 4: የመከላከያ መሳርያዎች አቅርቦትና አጠቃቀም በተመለከተ

ተ/ቁ	ጥያቄዎች	አማራጭ መልሶች	ይሻገሩ	ኮድ
ቁ401	ስራ በሚስሩበት ግዜ የአደጋ መከላከያ ይጠቀማለ	1. አዎን 2. የለም	ወደ ቁ.406 ዝለል	H1
ቁ402	ሇጥያቄ ቁ.401፡ መልስዎ አዎ ከሆነ ምን አይነት(ካንድ በላይ መልስ መስጠት ይቻላል)	1. ጓንት 1. አዎ 2. የለም 2. የጆሮ መከላከያ 1. አዎ 2. የም 3. የአፍና የአፍንጫ መከላከያ 1. አዎ 2. የለም 4. የጭንቅላት መከላከያ 1. አዎ 2.የለም 5. ሁለንም የሰውነት ክፍል 1. አዎ 2.የለም 6. የአይን መከላከያ መነፅር 1. አዎ 2.የለም 7.የፊት መሸፈኛ 1. አዎ 2. የለም 8.ቦቲ/ቆዳ ጫማ 1. አዎ 2. የለም 99.ሌላ ካለ ይገለፅ ----------		H2
ቁ403	ሇጥያቄ ቁ.201 መልስዎ አዎ ከሆነ መከላከያዎቹን ሁል ግዜ ይጠቀማለ	1. አዎን 2. የለም →	ወደ ቁ406 ዝለል	H3
ቁ404	ሇጥያቄ ቁ.203 መልስዎ የለም ከሆነ ሁሌ መከላከያ እንዳይጠቀሙ የሚያደርጎት ነገር ምንድን ነው;(ካንድ በላይ መልስ መስጠት ይቻላል)	1.ስለማይመች 1. አዎ 2. የለም 2.ስዓት ለመቆጠብ1. አዎ 2. የለም 3.ጉዳት ያመጣል ብዬ ስለማላስብ1. አዎ 2. የለም 4.ግዴለሽነት 1. አዎ 2. የለም		H4

		5.ስለሌለኝ 1. አዎ 2. የለም		
ቁ405	መከላከያ መሳርያውን ከየት ነው የሚያገኙት(ካንድ በላይ መልስ መስጠት ይቻላል)	1.ከተቋሙ 2.እራሴ እገዛዋለሁ 99. ከሌላ/ይጠቀስ/ ----------		H5
ቁ406	በዚህ ስራ ስትሰማሩ የጥንቃቄ ስልጠና ወስደው ነበር	1.አዎ 2.የለም		H6
ቁ407	በስራ ላይ እያሉ የጥንቃቄ ስልጠና ወስደው ያውቃሉ	1.አዎ 2.የለም →	ወደ ክፍል 5 ዝለል	H7
ቁ408	ለጥያቄ 407 መልሶ አዎ ከሆነ ስልጠናውን ከየት ነው ያገኙት(ካንድ በላይ መልስ መስጠት ይቻላል)	1.ከተቋሙ 2. መንግስታዊ ካልሆነ ግብረስናይ ድርጅት 3.ሌላ ካለ ይጠቀስ----------		H8

ክፍል 5፡ የሠራተኛውን ባህሪ በተመለከተ

ተ/ቁ	ጥያቄዎች	አማራጭ መልሶች	ይሻገሩ	ኮድ
ቁ501	ያጨሳሉ?	1.አዎ 2.የለም	መለሰዎ የለም ከሆነ ወደ ጥያቄቁ.503 ይሸጋገሩ	L1
ቁ502	ለጥያቄ ቁ.501 መልሰዎ አዎ ከሆነ በስንት ጊዜ	1.በየቀኑ 2 ከ.1-3 ቀን በሳምንት 3. አልፎ አልፎ		L2
ቁ503	አልኮን ይጠጣሉ?	1.አዎ 2.የለም	መልሰዎ የለም ከሆነ ወደ ጥያቄ ቁ.505 ይሸጋገሩ	L3
ቁ504	ለጥያቄ ቁ.503 መልሰዎ አዎ ከሆነ	1.በየቀኑ 2 ከ.1-3 ቀን በሳምንት 3. አልፎ አልፎ		L4

ቁ505	ጫት ይቅማሉ?	1.አዎ 2. የለም	መልሰዎ የለም ከሆነ ወደ ጥያቄ ቁ.507 ይሸጋገሩ	L5
ቁ506	ለጥያቄ ቁ.505 መልሰዎ አዎ ከሆነ በስንት ጊዜ	1.በየቀኑ 2 ከ.1-3 ቀን በሳምንት 3. አልፎ አልፎ		L6
ቁ507	ስራ ላይ እያሉ የእንቅልፍ ችግር አለበዎት	1. አዎን 2. የለም	መልሰዎ የለም ከሆነ ወደ ጥያቄ ቁ.509ይሸጋገሩ	L7
ቁ508	ለጥያቄ ቁ.507 መልሰዎ አዎ ከሆነ ምክንያቱ ምንድን ነው?	1. ያለ ዕረፍት/ቅያሬ ከ8 ሰአት በላይ መስራት 1. አዎ 2. የለም 2. በምሽት መስራት 1. አዎ 2.የ ለም 3. በእንድ ጊዜ ከእንድ በላይ ስራ መስራት 1. አዎ 2.የለም 4. ከፍተኛ የሙቀት ጫና1.አዎ 2.የ ለም 99. ሌላ ካለይጠቀስ ----------		L8

ይህ የመጠይቃችን መጨረሻ ነው። አነዚህ ጥያቄዎች ጊዜ ወስደው በመመለስ ላደረጉልን ትብብር ከልብ እናመሰግናለን።