COLLEGE OF HEALTH SCIENCES

SCHOOL OF PUBLIC HEALTH

DEPARTMENT OF PREVENTIVE MEDICINE

MAGNITUDE AND CONTRIBUTING FACTORS OF LOW BACK PAIN AMONG LONG DISTANCE TRUCK DRIVERS AT MODJO DRY PORT, ETHIOPIA, 2018.

BY: - TEWODROS YOSEF (BSc in Public Health)

A Research thesis to Be Submitted to Department of Epidemiology and Biostatistics of School of Public Health, Addis Ababa University in Partial Fulfillment for the Requirement for Masters of Public Health in Epidemiology and Biostatistics.

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Approval by the Board of Examination

This thesis by Tewodros Yosef (BSc in Public Health) is Accepted in its Present Form by Board of Examiners as Satisfying Thesis Requirement for the Degree Masters in Epidemiology and Biostatistics.

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Acknowledgement

First, my grateful gratitude and respect goes to my advisors Dr. Ayele Belachew and Mr. Yifoker Tefera for their timely guidance, constructive comments and advice throughout this research.

Secondly, I would like to thank Mizan-Tepi university, which sponsored me during my specialization in epidemiology and biostatistics and also Addis Ababa University, School of public health, department of epidemiology and biostatistics for equipping me for the accomplishment of this work.

The last, but not the least I would like to thank Norwegian Program for Capacity Development in Higher Education (NORAD)for funding this project based on the goal of reduction of the burden of injuries and occupational exposure through capacity building in low income countries (Project Number: 1300646-12).

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Acronyms

BMI----------Body Mass Index

CI----------Confidence Interval

DALYs----------Disability Adjusted Life Years

ETB----------Ethiopian Birr

LBP----------Low Back Pain

MSDs----------Musculoskeletal Disorders

SPSS----------Statistical Package for the Social Sciences

UK----------United Kingdom

USA----------United States of America

WBV----------Whole Body Vibration

WMSDs----------Work Related Musculoskeletal Disorders

YLDs----------Years Lived with Disability

Abstract

Background: Low back pain is a common musculoskeletal disorder affecting about eighty percent of people at some point in their lives. Globally, 37% of low back pain was deemed attributable to occupational risk factors and the magnitude was generally higher in those regions with lower overall health status.

Objective: To assess the magnitude and contributing factors of low back pain among long distance truck drivers at Modjo dry port, Ethiopia, 2018.

Methods: A cross-sectional study was conducted among systematically selected 422 long distance truck drivers at Modjo dry port, Ethiopia from February to March, 2018. Data was collected through face to face individual interview using structured questionnaire adapted from standardized Nordic questionnaire for the analysis of musculoskeletal symptoms. The data was entered using epi-data version 4.2.0.0, cleaned and analyzed using SPSS version 20 statistical software for windows. Binary logistic regression was computed to determine association using crude and adjusted odds ratios at 95% confidence intervals. Independent variables found significant with p-value less than 0.05 at the bivariate level were included in the multivariable logistic regression model to control for potential confounding.

Results: The prevalence of LBP was found to be 65%. The study found monthly income above 5350 ETB [AOR = 3.07, 95% CI (1.76-5.33), P = 0.000], smoking cigarette[AOR = 2.28, 95% CI (1.25-4.17), P = 0.007], physical inactivity [AOR = 2.14, 95% CI (1.26-3.61), P = 0.005], irregular mealtime [AOR = 1.73, 95% CI (1.02-2.93), P = 0.042], chronic diseases other than LBP [AOR = 2.16, 95% CI (1.28-3.65), P = 0.004], frequent lifting or carrying heavy objects [AOR = 3.25, 95% CI (1.83-5.75), P = 0.000], perceived improper sitting posture while driving [AOR = 1.95, 95% CI (1.17-3.25), P = 0.011] and perceived job stress [AOR = 2.00, 95% CI (1.09-3.70), P = 0.026] were predictors of low back pain.

Conclusion: This finding shows the public health importance of low back pain among long distance truck drivers in Ethiopia. Individual factors largely accounted for the development of low back pain, hence orientation on these modifiable risk factors and regular follow up on safety procedures should be considered to mitigate the problem.

Keywords: low back pain, magnitude, contributing factors, long distance truck drivers, Modjo dry port

1. Introduction

1.1. Background

The impact of musculoskeletal disorders in terms of disability is high causing 21.3% of the total Years Lived with Disability (YLDs) globally. It accounting for 33% of global YLDs in developed countries and 27% in developing countries (1). Work-related Musculoskeletal Disorders (WMSDs) are common among drivers and frequently causes to absenteeism (2).

Low Back Pain (LBP) is a common musculoskeletal disorder affecting 80% of people at some point in their lives and a leading cause of disability and a major contributor to health care utilization (3, 4). It is a serious occupational disease and leads to a serious social problem, huge workers' compensation and a decline in productivity (5-8). Globally, 37% of low back pain was deemed attributable to occupational risk factors and the magnitude was generally higher in those regions with lower overall health status (9).

The economic, societal and public health effects of LBP appear to be increasing. It incurs billions of dollars in medical expenditures each year (10). Generally, the burden of LBP far exceeds capacity in most countries (11). Globally, LBP arising from occupational exposures was estimated to cause 21.7 million Disability-Adjusted Life Years (DALYs) in 2010 and the 2010 Global Burden of Disease (GBD) study estimated that low back pain was among the top 10 diseases and injuries that account for the highest number of DALYs worldwide (1).

LBP is the most prevalent musculoskeletal condition and the most common cause of disability in developed nations (12). The lifetime prevalence of LBP in developed nations was reported to reach 85%. Prevalence of LBP in African is also rising and is of concern, but lack of information on the magnitude of LBP in developing countries is in short (3).

1.2. Statement of the Problem

Truck driving is among jobs causing occupational LBP (5, 13). According to researchers and safety analysts, truck driving is ranked as one of the most dangerous occupations in the world (14). It is also the occupation ranked as having "the greatest number of injuries and illnesses" according to occupational health experts (15). In addition to physical threats, long distance truck driving is also taxing psychologically, which can exacerbate existing health problems. Long distance truck drivers are more stressed when compared with other commercial drivers (16).

Occupational driving has often been associated with a high prevalence of back pain. The factors that contribute to cause the pain are diverse and might include work duration, prolonged sitting position, physical work load, lifting or carrying heavy objects, prolonged uncomfortable postures while driving, exposure to whole body vibration, poor diet, job dissatisfaction and other psychological factors, low socioeconomic status, body mass index and age (2, 4-8, 17-25). It is known that truck drivers travel long duration without having adequate resting time (6, 17-20). This makes truck drivers present 3 times the risk for LBP compared to individuals involved in other occupational activities (26). In a study done by Miyamoto et al., long driving time in one day was found a risk factor for low back pain with odds ratio of 2 (5).

There are more than 6000 Ethiopian trucks providing cargo services between Djibouti international port and Modjo dry port in Ethiopia. Truck drivers travel frequently to Djibouti international port in order to relieve the congested Djibouti international port (27). Truck drivers get incentive for each round trip to Djibouti and back to Modjo with 10 days given, but drivers travel long duration without having adequate resting time in order to get more incentive by reducing the total given days and increasing the amount of travelling. This makes truck drivers at high risk for developing low back pain due to prolonged seating while driving. Even though, these drivers run the high risk of occupational injuries and illnesses like drivers elsewhere, there is lack of evidence that shows the magnitude in this population in Ethiopia.

1.3. Significance of the study

Despite, the complain of low back pain among long distance truck drivers is known. To best of my knowledge, there is no study done previously on the magnitude of LBP among truck drivers in Ethiopia. The significance of this study was: aimed at estimating the magnitude and assess the possible contributing factors of low back pain among long distance truck drivers' in order to fill knowledge gap and also the findings will help policy makers to prioritize action aimed at risk reduction and also provide opportunities for future studies to fill in the gaps that this study could not address.

2. Literature review

Low back pain is defined as back pain or discomfort in the lower back region between the twelfth rib and gluteal folds, with or without radiating pain down one or both legs, lasting one day or longer in the previous seven days or the previous 12 months (28, 29). It can arise from the anatomical organs of the low back which are bony lumbar spine, discs between the vertebrae, ligaments, muscles, spinal cord, internal organs of the pelvis and skin covering the lumber area (4). Lower back pain may be classified by the duration of symptoms as acute, sub-acute and chronic. Generally, pain lasting less than six weeks is classified as acute, pain lasting six to twelve weeks is sub-acute, and more than twelve weeks is chronic pain. In approximately 5-15% low back pain can be attributed to a specific cause such as an osteoporotic fracture, neoplasm or infection (30, 31). For the remaining 85-95% of cases, the specific cause of low back pain is unclear (32, 33). This literature review includes the magnitude and contributing factors of low back pain.

2.1. Magnitude of Low Back Pain

A systematic review on global prevalence of chronic low back pain reveals Chronic low back pain prevalence was 4.2% in individuals aged between 24 and 39 years old and 19.6% in those aged between 20 and 59 (34). A systematic review done on the prevalence of low back pain in Africa reveals the low back pain point prevalence ranged from 10% to 14% among adolescents and 16% to 59% among adults (35). A Systematic Review on the Prevalence of Low Back Pain in Nigeria shows the 12- month prevalence ranged from 32.5% to 73.53% (36).

A case-control study among 346 truck drivers and official workers in Iran to determine the prevalence of musculoskeletal disorders and risk factors associated with these symptoms. The one-year prevalence of low back pain was 24.3% in truck drivers and 12.1% in official workers (2). A study conducted in UK to identify the prevalence of musculoskeletal problems amongst truck drivers and specific risk factors associated with back pain. Low back trouble at some point during their life was reported by 60% of the sample. Referring to the worst episode, this was rated as ‘mild’ by 36.5%, ‘severe’ by 38.3% and ‘very, very severe’ by 25.2% (6).

A study conducted among truck drivers in Sao Paulo, Brazil to investigate the prevalence of low back pain in truck drivers and check for possible risk factors related to the presence of low back pain. A total of 410 truck drivers were enrolled, 59% of the participants were complained low back

pain. Of the 59% truck drivers with back pain, 31.2% had occasional pain, 18% had constant pain, and 9.8% had experienced back pain some time in their professional lives (17). A study has been conducted among 105 professional truck drivers across five different companies in USA. LBP was the most prevalent (72.5%) (37). A cross sectional study conducted among Long Distance Truck Drivers of Mountainous Terrain in India to find the prevalence of low back pain in the truck drivers. Of 200 truck drivers included, the prevalence of low back pain is 73.5% (38). A cross sectional study among truck drivers in Tanzania, Dares Salaam revealed 88.7% prevalence of LBP (39). A cross sectional study carried out among truck drivers of goods transport companies in Nagpur city, India reveals 62.1% of truck drivers complain low back pain (13). A cross sectional study conducted among taxi drivers in Addis Ababa, Ethiopia found prevalence of 64.2% (21).

2.2. Factors Associated with Low Back Pain

2.2.1. Socio-Demographic Factors

Socio- demographic factors which includes age, body mass index, marital status, family size, level of education and economic status are the factors that contributed to low back pain. A study done Iran by Mozafari, et al. shows that age and higher body mass index are significantly associated with low back pain (2). A study in UK shows overweight is associated with low back pain (6). A study done in Ethiopia shows individuals body mass index (>18.5) is greatly associated with LBP (21). Another study done in Iran, MSDs particularly low back pain is related to the height, weight and age of drivers. In other words, more weight and age, the more probability of MSDs (LBP); while the height of drivers showed the reverse association (25).

A study conducted by Zanuto EAC et al shows older age, lower education and overweight are significantly associated with low back pain (40). Statistical findings revealed no significant value associated between marital status and LBP (39). A study conducted in Dhaka city among truck drivers found a statistically significant association between musculoskeletal problems and marital status and family size (41). Another study finding revealed that BMI, age as well education level showed to have statistically no association with LBP (39). Being married and level education were not significantly associated (42). A study done in Taiwan showed no association between income status and low back pain(43).

2.2.2. Life Style Factors and Medical Factors

Previous studies show life style (smoking cigarette, chewing chat, drinking alcohol, poor diet and lack of physical exercise) and medical conditions like suffering from pain, history of back trauma and diseases other than low back pain are identified as a cause for low back pain. Some studies have done previously reveal the strong significant association between being cigarette smoker and high chance of acquiring low back pain (6, 18, 41). One study identifies Participating in sports activities is associated with a lower prevalence of LBP (8). A study done in UK reveals poor diet is a factor that contributes to LBP (6), but another study shows irregular meal time, less of sport activity and lack sleeping time are not associated with low back pain (5). Physical activity was significantly associated but not for drinking alcohol (42). A study done by M Miyamoto et al. shows the factors significantly associated with LBP were history of back pain before working as a driver, suffering from fatigue, diseases other than LBP (18). Another study done in Melaku E. identified history of back trauma as a risk factor for LBP (21).

2.2.3. Ergonometric and Occupational Factors

From the study of the occupational health status of the trucking industry, two distinct and major risk factors related to this occupation turn up as root causes. The first one is the effect of prolonged seating and whole body vibration which are characteristics for this occupation and are believed to be the main risk factors for musculoskeletal disorders (MSD) particularly low back pain. The second root cause is the mental fatigue, which is caused by long, irregular working hours and stress related to driving, which is believed to have strong influence on causation of accidents and poor mental and physical health.

Some studies show that uncomfortable seat and uncomfortable back support are significant risk factor for low back pain (6, 8, 21, 39). Neither surface seat nor backrest alone was significantly associated with low-back pain (34). A study conducted in Malaysia by Fadhli et al. identified bad sitting posture while driving was associated with low back pain but comfort ability of the seat is not associated with low back pain (20). Frequent bending/twisting activities while driving is significantly associated with higher low back pain prevalence. Prolonged sitting alone was not associated with the risk of developing LBP. However, when the co-exposure factors of WBV and awkward postures were added to the analysis, the risk of LBP increased fourfold (22).

Some studies identified whole body vibration as an important risk factor for low back pain (7, 37). Driving in forward bending sitting posture and WBV exposure at X-axis were significant risk factors to LBP (23). Car vibration was not significantly associated with LBP (39). Frequent Manual handling and previous job involved sitting were associated with LBP (6, 21). Physical work load was a significant predictor of LBP (42).

A study done by Andrusaitis Sf et al reveals the only factor correlated with the presence of low back pain was the number of working hours per day, with an average of about 1 hour longer work time for drivers with low back pain compared to those without it and with an odds ratio of 1.07 (17). Other studies, driving time more than 4hours per day in a day (19), driving for more than 15hours per day (37) and long driving time (5) are associated with of low back pain. According to Fadhli et al., total working hours per week significantly associated with LBP (20) but another study done in Nigeria shows duration of driving per week and distances covered per journey had no significant influence on low back pain, but more years of driving (>16 years) have an influence (44). A study done by Mozafari et al identified work duration (more than 15 years of driving) is significantly associated with low back pain (2). However, other studies confirm no association (37, 39, 45).

2.2.4. Psychological Factors

A study done by Miyamoto et al. reported that irregular duty time, short resting time in a day are accounted for the higher prevalence of LBP. These unfavorable work formats may be closely related to the result that "shortage of spending time with family" is a personal factor inducing LBP (5). Psychosocial stressing factors such as prolonged working time and inadequate rest period during a working day are associated with higher LBP (7, 8, 21). Self-perceived job stress and job dissatisfaction were significantly associated with LBP (19). Perceived psychosocial work environment was not associated with LBP (42). Resting time was not significantly associated with LBP (39). According to George E. Ehrlich Chronic low back pain often has strong psychological overlay: work dissatisfaction, boredom, and a generous compensation system contribute to it (4).

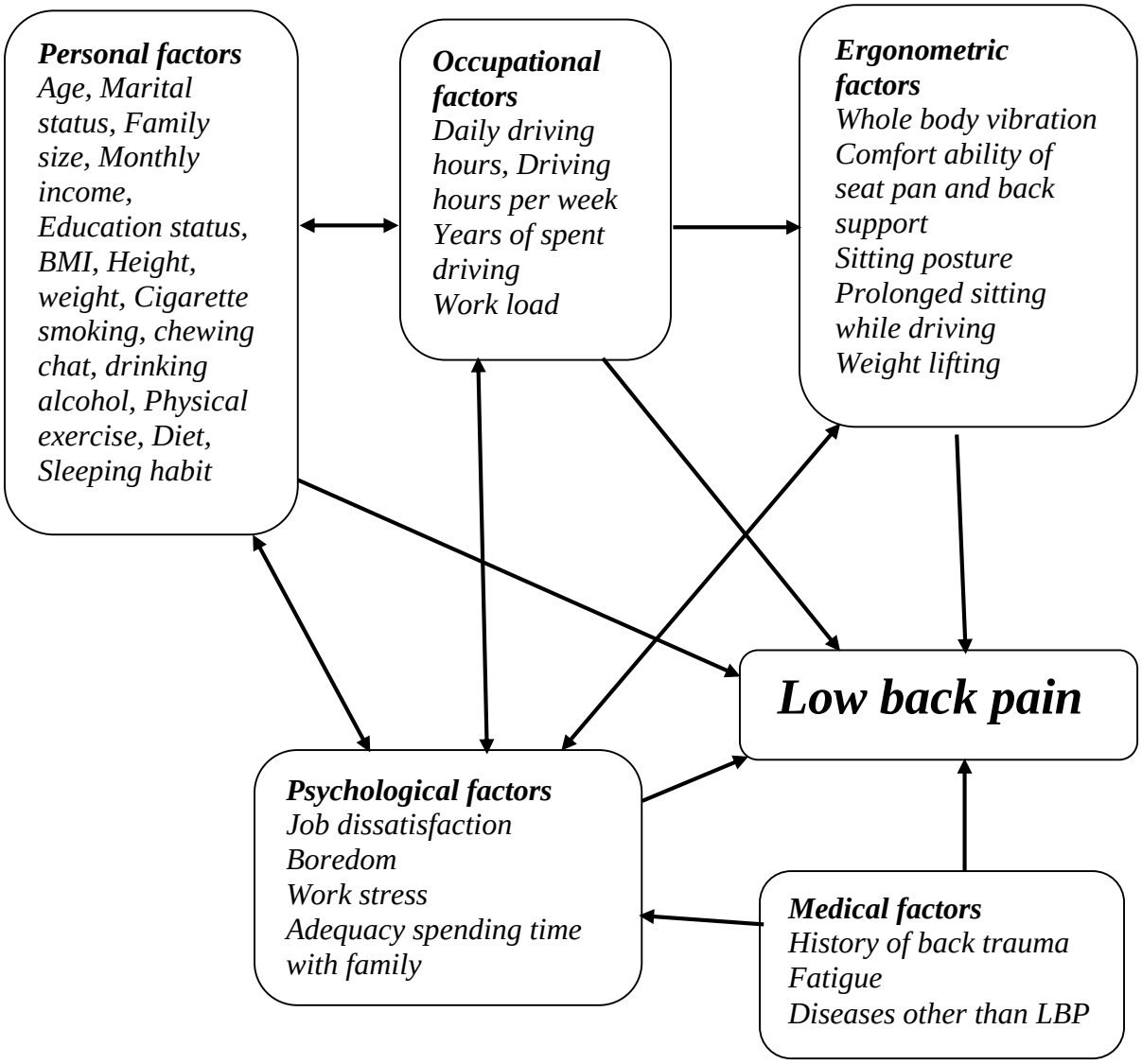

Figure 1:- Conceptual framework for the determinants of LBP among truck drivers.

3. Objective

3.1. General Objective

- To assess the magnitude and contributing factors of low back pain among long distance truck drivers at Modjo dry port, Ethiopia, 2018.

3.2. Specific Objectives

- To determine the magnitude of low back pain among long distance truck drivers at Modjo dry port, Ethiopia.
- To identify the contributing factors of low back pain among long distance truck drivers at Modjo dry port, Ethiopia.

4. Methods and Materials

4.1. Study Area

Modjo dry port is the first dry port development established at the end of 2009, to relieve the congestion of Djibouti port. It is located in central Ethiopia, 38 miles southeast of Addis Ababa. The port handles 95% of Ethiopia's trade and the major bottleneck on Ethiopia- Djibouti trade corridor. According to a report by world trade organization, the number of Ethiopian trucks servicing the transport corridor between the two countries are more than 6000 (27). Based on the information gathered from the Modjo dry port management authority, approximately around 300-400 trucks were arrived every day from Djibouti port.

4.2. Study Design and Study Period

Facility based quantitative cross-sectional study was conducted, to assess the magnitude and contributing factors of low back pain among long distance truck drivers at Modjo dry port. The study was conducted from February to March, 2018.

4.3. Study and Source Population

4.3.1. Source Population

All truck drivers driving between Djibouti international port and Modjo dry port were the source population.

4.3.2. Study Population

Selected truck drivers driving between Djibouti international port and Modjo dry port were the study population.

4.3.2.1. Inclusion Criteria

Having at least one-year experience and full time drivers of driving between Djibouti international port and Modjo dry port were included in the study.

4.3.2.2. Exclusion Criteria

Drivers with age above 60 years to control age related effect and had history of accident from known cause such as car crash, fall etc. since they are at risk for developing LBP from the trauma alone.

4.4. Sample Size

The sample size was determined using single population proportion formula. With input of: p = expected proportion of truck drivers with low back pain (0.5 or 50%), precision level 5%, 95% confidence interval and 10% for non-response compensation. The sample size computed was 422.

$$ni = \frac{(\mathrm{Z}\,\alpha/2)^2 \;\; \mathrm{p}(1-\mathrm{p})}{\mathrm{d}^2}$$

4.5. Sampling Method

On average a maximum of 15 days is required for a truck to make a round trip from Modjo dry port to Djibouti international port and back to Modjo dry port, unless a technical problem on the vehicle or other accident occurred. Based on the information from Modjo dry port management an average of 300 to 400 trucks arrives daily at the port. With this consideration to give each driver equal chance of inclusion, the total sample size was divided by fifteen days and got that 28 trucks drivers can be studied every day. To identify the potential study participants using systematic random sampling technique 300 was divided by 28 to obtain the constant for the sampling interval, which was 11. A random number between one and eleven was chosen as a starting number, in this case was 6. Hence, taking every eleventh driver from the 6^{th} driver, was studied until the total sample size was obtained.

4.6. Data Collection Instrument and Procedure

A modified standardized Nordic questionnaire for the analysis of musculoskeletal symptoms (46) was used. To collect data on socio-demographic factors (age, educational status, marital status and income, etc.), life style (cigarette smoking, chat chewing, drinking alcohol and physical exercise, etc.), LBP and pain characteristics, medical history on chronic diseases other than LBP, ergonomic factors, psycho-social factors, work characteristics such as daily driving hours, years spent driving, involvement in lifting or carrying objects and etc. Anthropometry (height and weight) was also measured using a mixed weight and height measuring scale (device). Data was collected by three environmental health professionals who had experience on data collection and received additional one-day training on data collection and ethical conduct by the investigator; the later supervised the whole data collection activities throughout the field work. Data was collected using face to face interview.

4.7. Study Variables

4.7.1. Dependent Variable

- Low back pain

4.7.2. Independent Variables

- Socio-demographic characteristics (age in completed years, education in formal system, monthly income, marital status) and Anthropometry (weight, height, BMI)
- Life style (smoking cigarettes, chewing chat, drinking alcohol and physical exercise) and Medical history (chronic diseases other than LBP).
- Work characteristics such as average daily driving hours, years spent driving, rest breaks between driving.
- Physical factors such as involvement in lifting or carrying of objects, previous job require prolonged sitting.
- Psycho-social factors such as work stress, job satisfactions, boredom, adequacy of spending time with family.

4.8. Operational Definitions

- Low back pain (LBP) was defined as pain at the lower back of the body at the time of driving or after having long time driving.
- Prevalence of LBP is frequency of study subjects who will response experiences of LBP in the past twelve months' time.
- Smoker is a person who smoke more than 2 pieces of cigarette daily.
- Drunker is a person who drinks (beer, local beer or areke, tella or tej) every day or every other day.
- Chat chewer is a person who chewing chats at least once within a week.
- Having physical exercise means if someone had 3 or more days of physical exercise.
- Regular meal time means if someone takes his breakfast, lunch and dinner based on the Ethiopian time context.
- Rest breaks between driving means if a driver takes rest after an hour or more of driving but not included rest for the purpose of meal and vehicle problem.
- Improper seating posture means if someone had bending, twisting and half buttock sitting posture while driving.

4.9. Data Quality Assurance

To maintain the data quality, a modified standardized Nordic questionnaire for the analysis of musculoskeletal symptoms (46) was used, which is already prepared in English. The content of the English version questionnaire was first translated to local language (Amharic) then re-translated to English in order to maintain its consistencies. A one-day training was given for data collectors concerning the objective and process of data collection and discuss about the presence of any ambiguous question in the questionnaire and was clarified. Finally, pre- testing was done in Akaki area, in which trucks densely found. Supervision was conducted by principal investigator on how data collectors administer the questionnaire to the respondents. Each data collector was checked the questionnaire from each study participant for completeness before leaving the interviewee. In order to avoid repetition, each data collector ask each drivers before starting to fill the questionnaire, whether a driver fill the questionnaire previously or not.

4.10. Data Processing and Analysis

Each questionnaire was given a unique code by the principal investigator. The collected data was coded, entered using Epi-data version 4.2.0.0, cleaned and analyzed using SPSS version 20 statistical software. Summary statistics of independent variables were presented using frequency tables and graph. Binary logistic regression was computed to determine association using crude and adjusted odds ratios at 95% confidence intervals. Independent variables found significant with p- value less than 0.05 at the bivariate level were included in the multivariable logistic regression model to control for potential confounding. Multi-collinearity and interaction terms were checked. The Hosmer-Lemeshow test was performed to check model adequacy.

4.11. Ethical Consideration

Ethical clearance and permission letters was obtained from Addis Ababa University – Institutional Review Board (AAU-IRB). Permission was acquired from the management of the Mojo Dry port. All study participants were about the purpose of the study, their right to deny participation, anonymity, confidentiality of the information. Verbal informed consent was also obtained before participation. No participant faced any harm. No monetary incentive for participating and it was solely on voluntary based.

4.12. Plan for Dissemination of Results

The result of the study will be first reported to Addis Ababa University, School of Public Health and to NORAD that was funding this study. It will be sent for publication in peer review journal and presentations shall be made in different scientific conferences.

5. Results

Out of 422 respondents, four hundred (400) male drivers were participated in this study, giving a response rate of 94.8%. The reason for non-response (5.2%) were the need for incentive by respondents, as a result of previous study by NGO on HIV prevalence was had incentive (150 ETB for having HIV testing), some respondents think that the study had not any importance for them and some were not volunteer without any reason.

5.1. Univariate Analysis of Factors

Sociodemographic characteristics of truck drivers

The mean age of respondents was 37.7(±9.13 SD) years with a range of 22 to 59 years. Two hundred ninety-two (73%) of the respondents were Orthodox/Catholic by religion. Two hundred sixty-eight (67%) were married, and two hundred sixty-seven (66.8%) achieved secondary school. Their mean monthly income was 5942 (±2446 SD) ETB and the median monthly income was 5350 ETB with ranging from 2,000 to 20,000 ETB. One hundred forty-nine (48.5%) respondents were overweight (See table 1).

Table 1:- Sociodemographic characteristics of the respondents, Modjo dry port, Ethiopia, 2018.

Variables		**Frequency (n)**	**percent(%)**
Age group (year)	Below 37.7 years	203	50.8
	Above 37.7 years	197	49.2
Religion	Protestant	33	8.2
	Orthodox/Catholic	292	73
	Muslim	75	18.8
Marital status	Single	96	24
	Married	268	67
	Separated/divorced/widowed	36	9
Level of education	Read and write up to grade 8	92	23
	Grade 9-12	267	66.8
	College or University	41	10.2
Income	Below 5350 ETB	200	50
	Above 5350 ETB	200	50
Body Mass Index (BMI) category	18.5-24.9	174	43.5
	25-29.9	194	48.5
	30 and above	32	8

Life style and medical characteristics of truck drivers

One hundred twenty-four (31%) respondents were habitually smoke cigarette and one hundred thirty-nine (34.8%) were chat chewer. Two hundred sixty-four (66%) were alcohol drinker. Two hundred fifty-five (63.8) had no habit of regular physical exercise and one hundred seventy-six (44%) had irregular mealtime. One hundred ninety-six (49%) had less than 6 hours of sleeping daily. One hundred sixty-seven (41.8%) had chronic diseases other than LBP. Of which, diabetes mellitus 9(5%), hypertension 11(7%), hemorrhoids 30(18%), asthma & sinusitis 19(11%), kidney disease 25(15%), leg numbness &pain 40(24%), gastritis or peptic ulcer disease 22(13%) and comorbidity of diabetes mellitus and hypertension 11(7%).

Magnitude and characteristics of low back pain of truck drivers

Two hundred sixty (65%) of the drivers reported low back pain at least once in the last twelve months. Out of those with LBP, for two hundred six (79.2%) the type of pain was self-limiting without any treatment. The pain among two hundred twenty-one (85%) was severe while for thirty-seven (14.2%) and one hundred sixty (61.5%) was chronic and spread to the lower part of the body (leg and buttock) respectively (See table 2). The most frequently reported triggering factor was lifting or carrying objects for one hundred forty-six (35.2%) followed by bending down for 28.2% while for 20.5% and 16.1% was twisting and not remember respectively.

Table 2:- The magnitude and characteristics of low back pain in the last 12 months among respondents, Modjo dry port, Ethiopia, 2018.

Variables		**Frequency(n)**	**Percent(%)**
Presence of LBP(n=400)	Yes	260	65
	No	140	35
Nature of pain (n=260)	Self-limiting without treatment	206	79.2
	Continuous without treatment	54	20.8
Level of pain at episode(n=260)	Mild	106	40.8
	Moderate	117	45
	Severe	37	14.2
Duration of LBP(n=260)	Acute(< 6 weeks)	10	3.8
	Subacute(6-12 weeks)	29	11.2
	Chronic(>12 weeks)	221	85
Spread of LBP to the lower part of the body(n=260)	Yes	160	61.5
	No	100	38.5

Occupational and ergonometric characteristics of truck drivers

Two hundred eleven (52.8%) drivers had less than 10 years of driving experience. The mean daily driving hours was 11.5 (±2.76 SD) hours with the range of 6 to 18 hours. Two hundred fifty-three (63.2%) reported driving an average of 10-15 hours in a typical day. Three hundred thirty-nine (84.8%) had breaks in between driving, of this 51.3% for thirty and more minutes. Three hundred eight (77%) drivers were frequently involved in lifting or carrying objects, of which 67.5% were lifting or carrying about 25 and more kilograms weighting objects. Two hundred four (51.8%) reported former job required prolonged sitting. Regarding sitting posture, two hundred twenty-two (55.5%) perceived that they had "proper" sitting posture while driving. Two hundred sixteen (54%) used to sit reported with the absence of suspension seat on their trucks. Two hundred ninety-six (74%) were reported the presence of adjustable back support on their trucks (See table 3).

Table 3:- Occupational and ergonometric risk factors among respondents, Modjo dry port, Ethiopia, 2018.

Variables		Frequency(n)	Percent(%)
Years spent truck driving	<10 years	211	52.8
	≥10 years	189	47.2
Average daily driving hours	<10 hours	100	25
	10-15 hours	253	63.2
	>15 hours	47	11.8
Rest breaks between driving	Present	339	84.8
	Absent	61	15.2
Time taken for rest(n=339)	<30 minutes	165	48.7
	≥30 minutes	174	51.3
Frequent Involvement in lifting/carrying objects	Yes	308	77
	No	92	23
How weighed(n=308)	<25 Kgs	100	32.5
	≥25 Kgs	208	67.5
Former job require prolonged sitting	Yes	207	51.8
	No	193	48.2
Perceived sitting posture while driving	Proper	222	55.5
	Improper	178	44.5
Truck with suspension seat	Yes	184	46
	No	216	54
Truck with adjustable back support	Yes	296	74
	No	104	26

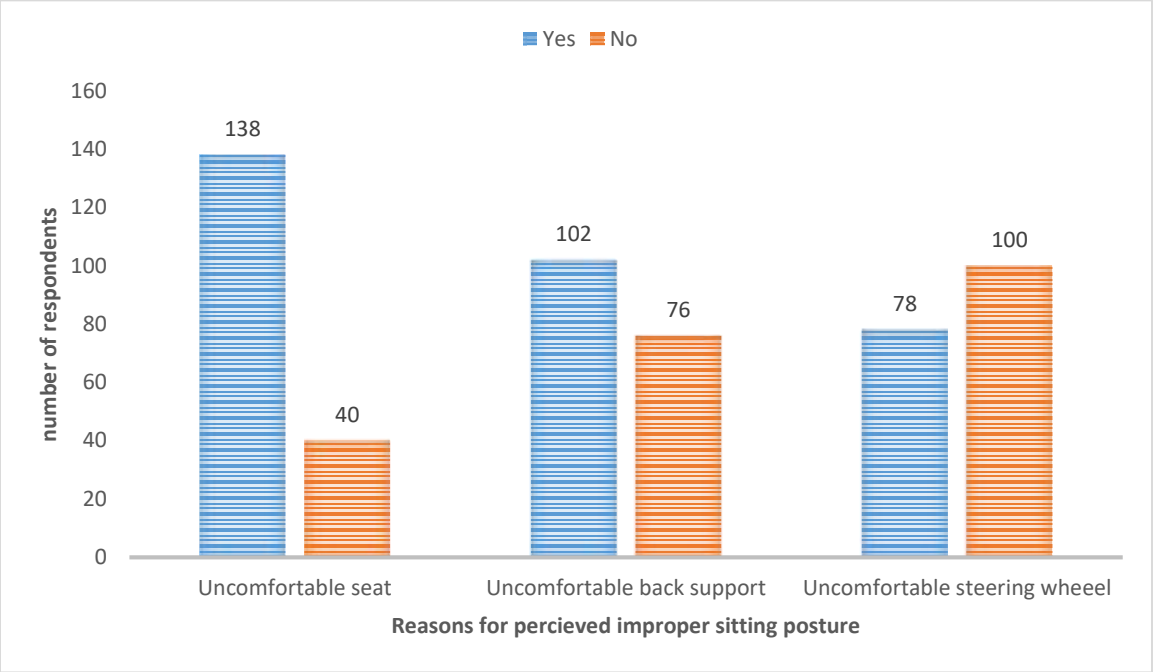

Figure 2:- Reasons for perceived improper sitting posture of the respondents, Modjo dry port, Ethiopia,2018.

Psych-social characteristics of truck drivers

Two hundred forty-nine (62.2%) reported that they are satisfied with their job while three hundred three (75.8%) perceived that their job is stressful. Two hundred ninety-seven (74.2%) and three hundred thirty-nine (84.8%) had boredom with job and short spending time with their family respectively.

5.2. Bivariate Analysis of Factors Associated with LBP

Drivers with age above 37.7 years were 2.5 times more likely to have LBP compared to those below 37.7 years [COR = 2.45; 95% CI (1.60-3.76)] of age. Drivers with income above 5350 ETB were 3.4 times more likely to have low back pain compared to drivers with income of below 5350 ETB [COR = 3.44, 95% CI (2.22-5.32)]. Drivers who smoke cigarette were 3.7 times more likely to develop LBP compared to non-smokers [COR= 3.72, 95% CI (2.02-6.29)] respectively. Those who had no physical exercise were 2 times increased odds of developing low back pain [COR = 2.35, 95% CI (1.54-3.60)]. Drivers with irregular mealtime were 2.8 times more likely to have LBP compared to drivers with regular mealtime [COR= 2.84, 95% CI (1.61-3.84)] and those with sleeping less than 6 hours in a day were 1.9 times high likely to develop LBP than drivers with sleeping 6 and more hours in a typical day [COR= 1.92, 95% CI (1.1.26-2.91)]. Drivers with chronic diseases other than LBP were 2.8 times more likely to develop LBP than drivers with no chronic diseases [COR= 2.78, 95% CI (1.78-4.36)]. Drivers with driving experience of ten and more years were 2.9 times increased odds of developing LBP compared to drivers with less than ten years of driving experience [COR = 2.89, 95% CI (1.87-4.46)]. Drivers who are frequently involved in lifting or carrying objects were 3 times more likely to develop LBP compared to those who had not such history [COR = 3.25, 95% CI (2.01-5.26)]. Drivers who perceived improper sitting posture while driving were 2.4 times more likely to develop LBP compared to those who perceived proper sitting while driving [COR = 2.44, 95% CI (1.58-3.76)]. Drivers with perceived job stress were 2.4 times and boredom with job were 1.8 times more likely to develop LBP compared to those with no perceived job stress and no boredom with job [COR = 2.38, 95% CI (1.49-3.80)] and [COR = 1.84, 95% CI (1.16-2.91)] respectively.

5.3. Multivariable Analysis of Factors Associated with LBP

To avoid over-fitting in the final model because of excessive number of variables, only variables found statistically significant at P< 0.05 in the bivariate analysis and variable not statistically significant but had clinical significance (importance) were included in multivariable binary logistic regression model. Multi-collinearity between independent variables in the model was checked and the variance inflation factor (VIF) were was found acceptable (less than 5). Interaction terms were checked; for the biologically meaningful variable (like age, average daily driving hours, years spent driving), 2-way interactions applied and was not found significant. Moreover, the Hosmer-Lemeshow goodness of fit test indicated (P = 0.786) that the model was good enough to fit the data well. Consequently, monthly income, smoking cigarette, physical exercise, regularity of meal time, diseases other than LBP, frequent involvement in lifting or carrying objects, perceived sitting posture while driving and perceived job stress were significantly associated with low back pain.

Drivers with monthly income above 5350 ETB were 3 times more likely to develop LBP compared to those drivers with income below 5350 ETB [AOR = 3.07, 95% CI (1.76-5.33)]. Drivers who smoke cigarette were 2.3 times increased odds of developing LBP compared to those who do not smoke cigarette [AOR = 2.28, 95% CI (1.25-4.17)]. Drivers who had not habit of having physical exercise were 2 times increased odds of developing LBP compared to those who had physical exercise of at least one day in a week [AOR = 2.14, 95% CI (1.26-3.61)]. Drivers who had irregular meal time were 1.7 times more likely to develop LBP compared to those drivers who had regular meal time [AOR = 1.73, 95% CI (1.02-2.93)]. Drivers who had chronic diseases other than LBP were 2.2 times increased odds of developing LBP than drivers who had no chronic diseases [AOR = 2.16, 95% CI (1.28-3.65)].

Drivers who frequently involved in lifting or carrying objects were 3.2 times more likely to develop LBP than who had not in such activity [AOR = 3.25, 95% CI (1.83-5.75)]. Drivers who perceived had “improper” sitting posture while driving were 2 times increased odds of having LBP compared to those who perceived had “proper” sitting posture while driving [AOR = 1.95, 95% CI (1.17-3.25)]. Drivers who perceived job stress were 2 times increased odds of developing LBP compared to drivers who hadn’t such history [AOR = 2.00, 95% CI (1.09-3.70)] (see table 4).

Table 4:- Multivariable analysis of factors associated with low back pain among respondents, Modjo dry port, Ethiopia, 2018.

Variables		Presence of LBP		AOR (95% CI)	P-value
		Yes n(%)	No n(%)		
Age group(years)	Below 37.7 years	112(55.2%)	91(44.8%)	1.00	
	Above 37.7 years	148(75.1%)	49(24.9%)	1.08(0.54-2.18)	0.822
Monthly income	Below 5350 ETB	103(51.5%)	97(48.5%)	1.00	
	Above 5350 ETB	157(78.5%)	43(21.5%)	3.07(1.76-5.33)	0.000*
Smoking cigarette	Yes	103(83.1%)	21(16.9%)	2.28(1.25-4.17)	0.007*
	No	157(56.9%)	119(43.1%)	1.00	
Physical exercise	Yes	76(52.4%)	69(47.6%)	1.00	
	No	184(72.2%)	71(27.8%)	2.14(1.26-3.61)	0.005*
Mealtime	Regular	126(56.2%)	98(43.8%)	1.00	
	Irregular	134(76.1%)	42(23.9%)	1.73(1.02-2.93)	0.042*
Hours taken for sleeping	< 6 hours	142(72.4%)	54(27.6%)	1.15(0.68-1.94)	0.602
	≥ 6 hours	118(57.8%)	86(42.2%)	1.00	
Chronic diseases other than LBP	Present	130(77.8%)	37(22.2%)	2.16(1.28-3.65)	0.004*
	Absent	130(55.8%)	103(44.2%)	1.00	
Years spent truck driving	<10 years	114(54%)	97(46%)	1.00	
	≥10 years	146(77.2%)	43(22.8%)	1.24(0.62-2.49)	0.545
Average daily driving hours	<10 hours	60(60%)	40(40%)	1.00	
	10-15 hours	165(65.2%)	88(34.8%)	0.96(0.54-1.71)	0.897
	>15 hours	35(74.5%)	12(25.5%)	1.40(0.54-3.59)	0.489
Frequent lifting or carrying objects	Yes	220(71.4%)	88(28.6%)	3.25(1.83-5.75)	0.000*
	No	40(43.5%)	52(56.5%)	1.00	
Perceived sitting posture while driving	Proper	125(56.3%)	97(43.7%)	1.00	
	Improper	135(75.8%)	43(24.2%)	1.95(1.17-3.25)	0.011*
Perceived job stress	Yes	212(70%)	91(30%)	2.00(1.09-3.70)	0.026*
	No	48(49.5%)	49(50.5%)	1.00	
Boredom with job	Yes	204(68.7%)	93(31.3%)	1.42(0.77-2.63)	0.260
	No	56(54.4%)	47(45.6%)	1.00	

CI = Confidence Interval AOR = Adjusted odds ratio * = significant at p-value < 0.05

6. Discussion

This study revealed that the twelve months' prevalence of low back pain among long distance truck drivers at Modjo dry port, Ethiopia was 65%. The finding of this study was higher than 62.1% prevalence rate among truck drivers of goods transport companies in Nagpur city, India(13), 60% amongst truck drivers in UK(6), 59% among truck drivers in Sao Paulo, brazil(17), 24.3% of case-control study among truck drivers and official workers in Iran(2). However it was lower than 72.5% among professional truck drivers in USA(37), 73.5% among Long distance truck drivers of mountainous terrain in India(38) and 88.7% among truck drivers in Dares Salaam, Tanzania (39). The variation observed compared to other studies could be due to the differences in methodology, sample size, population studied and road infrastructure.

This study revealed that increased monthly income was significantly associated with LBP. An increased income could be due to frequent travelling and continuous long driving hours to gain more money. But, a study done in Taiwan showed no association between LBP and any income status(43). The variation could be the difference in the way of measurement used and the socio-cultural characteristics of the study population.

The higher odds of acquiring LBP was seen among physical inactive drivers in this study. Being physical inactive was very strongly associated with LBP. This finding is consistent with previous studies done in Israel and Italy(8, 42). However, study in Japan was showed no significant association(5). The variation could be due to physical exercise in japan is as culture than the participants in the current study. Irregular mealtime was significantly associated with LBP. It could be due to continuous long driving time without having meal. This results a high chance of acquiring LBP due to poor nutrition as well as prolonged sitting in one position for long period of time, because of continuous long driving time. This is supported by study done in UK(6) but, a study done in japan was revealed no significant association (5). The variation could be due to the difference in operational definition. The increased odds of developing LBP was observed among drivers with chronic diseases other than LBP. Having chronic diseases other than LBP was highly associated with LBP. This finding is supported by Miyamoto et al., a study done in Japan(18). This study showed association between cigarette smoker and LBP. This finding is consistent to previous studies have done previously revealed the strong significant association between being cigarette smoker and high odds of acquiring low back pain(6, 18, 41).

More than three-fourth of the drivers were frequently involved in lifting or carrying objects. Frequent involvement in lifting or carrying objects was strongly associated with increased risk of developing LBP. This fining is similar with previous studies done in UK and Addis Ababa, Ethiopia (6, 21). This could be due to improper lifting or carrying activities (bad ergonometric) that prone to back injury. Since lifting objects improperly or carrying objects not balanced with their capacity may resulted trauma to the back and finally back pain. The odds of developing LBP among drivers with perceived improper seating posture while driving was higher compared to drivers with perceived proper seating posture while driving. Improper seating while driving was statistically associated with LBP. This finding is consistent with previous studies done by Fadhli et al. and Rozali et al. in Malaysia and USA(20, 22, 23). Since the scientific fact revealed that improper sitting posture (twisting, forward bending, half buttock sit-downs) can cause compression on lumbar structure and finally result LBP. This study also revealed association between perceived job stress and LBP. This is consistent with previous studies(19).

This study showed no statistically significant association between age and LBP. This finding is consistent with a study done in Dare salaam, Tanzania(39). But inconsistent to studies done by Mozafari et al. and Sadeghi et al. in Iran were found the significant association between age and LBP(2, 25). This study revealed hours taken for sleeping was not associated with LBP. This is consistent with a study done by Miyamoto et al. (5).

This study showed no association between LBP and years spent truck driving. This is consistent with a studies done in Kano Nigeria, Tanzania and USA(37, 39, 45). However, the result is in contrary to studies done in Iran and Ibadan Nigeria(2, 44). This study revealed that average daily driving hours was not statistically associated with LBP. This finding is inconsistent with studies that revealed increased daily driving hours associated with LBP(5, 17, 19, 37). The methodology used and study population difference may play a role for this variation. Almost all respondents in the current study had nearly similar hours of driving between those who had LBP and those not. This study also revealed no association boredom with job and LBP. This is in contrary to previous studies (4).

7. Strength and Limitation of the Study

7.1. Strength

- To best of my knowledge, this study is the breakthrough (first) study done among long distance truck drivers in Ethiopia. It addressed one of the major occupational health problems among neglected group of workers (truck drivers).
- High response rate (94.8%).

7.2. Limitation

- Not using clinical signs and symptoms to diagnose LBP may affect the result.
- Not using measurement tools for some variables (like job satisfaction, job stress and proper seating posture).
- Because of shortage of reference materials on the topic, I used some outdated materials (references).

8. Conclusion

The prevalence of LBP among long distance truck drivers was found remarkable and we can conclude that LBP is the public health importance among truck drivers in Ethiopia. Increased monthly income, smoking cigarette, physical inactivity, irregular mealtime, having chronic diseases other than LBP, frequent involvement in lifting or carrying objects, perceived improper sitting posture while driving and perceived job stress were positive predictors of LBP. However, other factors like age, hours taken for sleeping, years spent truck driving, average daily driving hours and boredom with job were not significantly associated with LBP. Individual factors were largely accounted for the development of low back pain, hence orientation on these modifiable risk factors and regular follow up on safety procedures should be considered to mitigate the problem.

9. Recommendation

For drivers: It is better to have physical exercise at least one day for thirty minute for healthy musculoskeletal (low back) system and Having regular checkups in order to identified and treat chronic diseases other than LBP timely. Avoiding smoking cigarette in order to have a good health status, not only for LBP but also for other illnesses.

For Ethiopian shipping and logistics enterprise: In collaboration with tuck unions to Build and make access cafeteria for drivers in different locations with reasonable distance in between to prevent irregular meal time because of the absence of cafeteria on the way.

For policy makers: Awareness creation campaign program should be organized for drivers on the importance of proper ergonomics to reduce the risk of LBP. In collaboration with road transport authority to formulate prevention strategies and initiate proper medical intervention at the right time when early symptoms of LBP manifested.

For researchers: Further study is recommended, to investigate the temporal relation between contributing factors and low back pain using other study designs. since the drawback of this research design (cross-sectional design) is not to show temporal relation between cause (contributing factor) and effect (LBP). And also further study is needed to investigate other contributing factors such as truck type, seat type and whole body vibration.

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Annexes

Annex I: Study Information Sheet

Hello! My name is **Tewodros Yosef**. I am data collector for master of public health student research in Addis Ababa University who is carrying out a study on *"**Assessment of the magnitude and contributing factors of lower back pain among truck drivers at Modjo dry port"***. Objective of the study is ***to assess the magnitude and contributing factors associated with lower back pain among truck drivers at Modjo dry port***. The result will provide important information on the ways to risk reduction of the problem. Participating in this study will not have any risk or harm. You either have full right to Participate or decline participation in this study as participant. You may respond to all the questions or you may not answer to questions you do not want to and you may end the interview at any time you want. You can ask any question that is not clear for you. Any information forwarded will be kept confidential and names will not be written or specified. The interview will take about 20 to 30 minutes.

If you have any question regarding the study, please contact Tewodros Yosef:

Cellphone: 0920478370

Email: tewodrosyosef47@gmail.com

Annex II: Informed Consent Form for Drivers

As to the information given above, Participation in this study is voluntary and is not a mandatory. Your answers will remain confidential, and we will not be taking down your name or address, so your answers will be anonymous. I would like to tell you that you are selected randomly to be participant of this Study. You can choose not to answer any individual question that you do not want to answer and you may end this interview at any time you want. However, I hope that you will participate in this study since your honest response to the interviews will be very important for the purpose of the study.

At the same time, I would like to appreciate your voluntarily participation in the study after a thorough understanding of the information given to you.

Now, are you willing to participate in this study?

1- No (say thank you)

2- Yes (continue interviewing)

Annex III: English Version Questionnaire

I. Sociodemographic information			
S/N	**Questions**	**Responses**	**Remark**
101	Age in completed years?	_____	
102	What is your religion?	1. Protestant 2. Orthodox 3. Muslim 4. Others (specify)	
103	What is your marital status?	1. Single 2. Married 3. Divorced/separated 4. widower	
104	What level education you achieved?	1. Read & write up to Grade 8 2. Grade 9-12 3. College and university	
105	Monthly income in number (ETB)	_____	
106	Weight in kg (measure)	_____	
107	Height in cm (measure)	_____	

II. Low back pain characteristics			
S/N	**Questions**	**Responses**	**Remark**
201	Have you at any time during the last 12 months had trouble (ache, pain and discomfort) in the low back?	1. Yes 0. No	If "No" go to 301
202	If yes, when did LBP started?	1. Before working as, a truck driver 2. After working as a truck driver	
203	Can you indicate the nature of your low back pain?	1. Self-limiting without treatment	

		2. Continuous without treatment	
204	How bad was the pain during the worst episode?	1. Mild 2. Moderate 3. Severe	
205	For how long have you had low back pain problem?	1. < 6 weeks 2. 6-12 weeks 3. > 12 weeks	
206	Is the pain radiate to the lower part of the body (buttock, leg)?	1. Yes 0. No	
207	Which condition is the triggering factor for your LBP?	1. Lifting/carrying objects 2. Bending down 3. Twisting 4. Not remember	
III. Life style and Medical information			
S/N	**Questions**	**Responses**	**Remark**
301	Are you currently smoke cigarette on daily base?	1. Yes 0. No	
302	If yes, how many cigarettes?	1. ≤2 2. >2	
303	Are you currently consumed alcohol (beer, areke, tella, tej)?	1. Yes 0. No	
304	If yes, how often?	1. Every day or every other day 2. Once or twice in a week 3. 1-3 times in a month 4. Occasionally, less than once in a month	
305	Are you currently chewed chat?	1. Yes 0. No	

306	If yes, how often?	1. Every day or nearly every day 2. Once or twice a week 3. 1-3 times a month	
307	Do you have the habit of physical exercise?	1. Yes 0. No	
308	If yes, how often?	1. <3 days 2. ≥3 days	
309	Have you had breakfast (7-9 am), lunch (12 am- 2 pm) and dinner (6 pm-8 pm) time?	1. Yes 0. No	
310	How many hours spent for Sleeping?	1. <6 hours. 2. ≥6 hours	
311	Are you live with any chronic disease condition other than low back pain?	1. Yes 0. No	
312	If yes, what type of disease? (specify)	_____	

IV. Occupational and Ergonometric factors

S/N	Questions	Responses	Remark
401	How many years spent on truck driving?	1. < 10 years 2. ≥ 10 year	
402	How many hours do you drive in a day?	1. < 10 hours 2. 10-15 hours 3. > 15 hours	
403	Do you have a rest break in between driving?	1. Yes 0. No	
404	If yes, how many hours?	1. < ½ hour 2. ≥ ½ hour	
405	Do you often involve in lifting or carrying heavy objects?	1. Yes 0. No	

406	If yes, how weigh do you lift or carrying?	1. <25 kg 2. ≥25 kg	
407	Is your former job required prolonged sitting?	1. Yes 0. No	
408	Have you had (bending, twisting, half buttock sitting) sitting posture while driving?	1. Yes 0. No	
409	If yes, what do you think the cause of bending, twisting, half buttock sitting?	1. Uncomfortable seat pan 2. Uncomfortable back support 3. Uncomfortable steering wheel	
410	Does the vehicle you used have suspension seat?	1. Yes 0. No	
411	Does the driver's seat of a vehicle have an adjustable back support?	1. Yes 0. No	
V. Psycho-social factors			
S/N	**Questions**	**Responses**	**Remark**
501	Are you satisfied with the job you have?	1. Yes 0. No	
502	Do you think the job is stressful?	1. Yes 0. No	
503	Are you feel boredom with driving?	1. Yes 0. No	
504	Do you have enough time to spend with your family?	1. Yes 0. No	

Thank you for your cooperation

Annex IV: Information Sheet (Amharic Version)

ስለጥናቱ ማስታወቂያ ቅጽ

ጤና ይስጥልኝ ስሜ **ቴዎድሮስ ዮሴፍ** እባላለሁ። የመጣሁት ከአ.አ ዩኒቨርስቲ ጤና ሳይንስ ኮሌጅ ኢፕድሚዩሎጅና ባዮስታቲስቲክስ ት/ት ክፍል ለሚሰራ ጥናት መረጃ ለማሰባሰብ ነው።የጥናቱ ዋና አላማ የጀርባ ህመም በረዥም የጭነት መኪና አሽከርካሪዎች የችግሩ መጠንና ለችግሩ አስተዋፅኦ የሆኑትን ማወቅ ነው። የሚሰጡት መረጃ በሙሉ በፍፁም አስተማማኝነት ለዚህ ጥናት ብቻ የሚያገለግል ሲሆን በዚህ ቃለ መጠይቅ ስም ይሁን አድራሻ አይገለጽም።መጠይቁ የእርስዎ ፍቃደኝነት ፍጹም ከተረጋገጠ ብቻ የሚካሄድ ይሆናል።በተጨማሪም ለመመለስ የማይፈልጓቸው ጥያቄዎች ካሉ ጥያቄውን ለመመለስ አይገደዱም።እንዲሁም በጥናቱ ላይ በሙሉም ይሁን በከፊል ላለመሳተፍ ከፍለጉ በማንኛውም ሰአት ማቋረጥ ይችላሉ።

ጥናቱን በ ተመለከተ ጥያቄ ካለዎት ማንኛዉም ጥያቄ መጠየቅ ይቻላል!!

ስም፡ ቴዎድሮስ ዮሴፍ ስልክ ቁ. 0920478370 አድራሻ፡ tewodrosyosef47@gmail.com

Annex V: Informed Consent (Amharic Version)

ከመጠይኩ በፊት የተጠያቂውን ስምምነት ማረጋገጫ ቅጽ

ከላይ በመግቢያው ላይ የተጠቀሰው መረጃ አንብቢያለሁ ወይም በቃል የተሰጠኝን ማብራሪያ ተረድቻለሁ።በዚህ መሰረት ከኔ የሚጠበቅብኝን ድርሻ በሚገባ አውቄዋለሁ አናም በዚህ ጥናት ላይ በመሳተፍ ሊከሰቱ የሚችሉትን ሁኔታዎች ተገንዝቢያለሁ።ከዚህ ጥናት በማንኛውም ሰአት ያለምንም ቅድመ ሁኔታና ምክንያት ራሴን ከተሳታፊነት የማግለል ሙሉ መብት እንዳለኝ ተረድቻለው።ይህን ውሳኔዬን ተከትዬ በኔም ሆነ በቤተሰቦቼ ላይ በምንፈልገው የጤና አገልግሎት ላይ ምንም አይነት አሉታዊ ተጽኖ አንደማይደርስብኝ ተረድቻለው። መጠይቁን እንድቀጠል ፈቃደኛ ነዎት?

1. ፈቃደኛ ናቸው ቃለመጠይቁ ይቀጥላል
2. ፈቃደኛ አደለሁም ቃለመጠይቁ በማቆም አመስግነው ይለያዩ

ጥናቱን በተመለከተ ማብራሪያ የተሰጠ መሆኑን የሚያረጋግጥ የምስክር ፊርማ ----------

Annex VI: Amharic Version Questionnaire

I. ሶሽዮ-ዲሞግራፊክ መግለጫ			
ተ.ቁ	**ጥያቄዎች**	**ምላሾች**	**ምርመራ**
101	እድሜ በሙሉ አመት።	_____	
102	ሀይማኖትህ ምንድን ነው።	1. ፕሮቴስታንት 2. ኦርቶዶክስ/ካቶሊክ 3. ሙስሊም 4. ሌላ (ጥቀስ)	
103	የጋብቻ ሁኔታ ምንድን ነው።	5. ያላገባ 6. ያገባ 7. የፈታ/የተለያየ 8. ባለቤቱ የሞተችበት	
104	የደረስክበት የትምህርት ደረጃ።	1. መጻፍና ማንበብ - 8 ኛ ክፍል 2. 9-12 ክፍል 3. ኮሌጅና ዩኒቨርሲቲ	
105	ወርሃዊ ገቢህ (በኢትዮጵያ ብር) ምን ያህል ነው።	_____	
106	ክብደት በኪሎ ግራም (መመዘን)	_____	
107	ቁመት በሴንቲ ሜትር (መለካት)	_____	

II. የታችኛው የጀርባ ህመም ባህርያት			
ተ.ቁ	**ጥያቄዎች**	**ምላሾች**	**ምርመራ**
201	ባለፉት 12 ወራት በታችኛው የጀርባ ክፈል (ውጋት, ህመም እና አለመመቸት) አለ።	1. አዎ አለ 0. የለም	
202	መልስህ አዎ ከሆነ, መቼ ነው የጀመረህ።	1. የጭነት መኪና ሹፌር ከመሆኔ በፊት	

		2. የጭነት መኪና ሹፌር ከሆንኩ በኃላ	
203	የህመሙ አይነት ምን አይነት ነው።	1. ያለ መድሀኒት በራሱ የሚለቅ 2. ከጀመረ ያለ መድሀኒት የማይለቅ	
204	ህመሙ ሲጀምርህ ስሜቱ ምን ያህል ነው።	1. ቀላል 2. መካከለኛ 3. የከፋ	
205	ህመሙ ከጀመረህ ምን ያህል ጊዜ ይሆናል።	1. ከ 6 ሳምንታት ያነሰ 2. ከ 6-12 ሳምንታት 3. ከ 12 ሳምንታት በላይ	
206	ህመሙ ወደ ታችኛው የሰውነት ክፍል (መቀመጫ፣ እግር) ይሰራጫል።	1. አዎ ይሰራጫል 0. አይሰራጭም	
207	ህመሙን የሚያስነሳብህ ምክንያት የትኛው ነው።	1. እቃ ማንሳት ወይም መሸከም 2. መጎንበስ 3. ወደ ጎን መጠማዘዝ 4. አላስታውስም	
III. ላይፍ ስታይልና ሜዲካል መግለጫ			
ተ.ቁ	**ጥያቄዎች**	**ምላሾች**	**ምርመራ**
301	ሲጋራ በየቀኑ ታጨሳለህ።	1. አዎ አጨሳለሁ 0. አላጨስም	
302	ምላሽህ አዎ ከሆነ፤ በቀን ምን ያህል ሲጋራ ታጨሳለህ።	1. ሁለትና ከዚያያነሰ 2. ከሁለት በላይ	
303	አልኮል ትጠጣለህ (ቢራ፣ አረቄ፣ ጠላ ፣ ጠጅ)።	1. አዎ እጠጣለሁ 0. አልጠጣም	

304	ምላሽህ አዎ ከሆነ፤ ምን ያህል ጊዜ ትጠጣለህ።	1. በየቀኑ ወይም አንድ ቀን እያሳለፍኩ 2. በሳምንት አንድ ወይም ሁለት ጊዜ 3. በወር ከ 1 እስከ 3 ጊዜያት 4. አልፎ አልፎ, በወር ከ1 ጊዜ በታች	
305	ጫት ትቅማለህ።	1. አዎ እቅማለሁ 0. አልቅምም	
306	ምላሽህ አዎ ከሆነ፤ ምን ያህል ጊዜ ትቅማለህ።	1. በየቀኑ ወይም አንድ ቀን እያሳለፍኩ 2. በሳምንት አንድ ወይም ሁለት 3. በወር ከአንድ ጊዜ ያነሰ	
307	ስፖርት ትሰራለህ።	1. አዎ እሰራለሁ 0. አልሰራም	
308	ምላሽህ አዎ ከሆነ፤ ምን ያህል ቀናት ትሰራለህ።	1. ከሶስት ቀናት በታች 2. ሶስት ቀናት ና ከዚያ በላይ	
309	ቁርስህን (1-3 ስአት) ፣ ምሳህን (6-8 ስአት) እና እራትህን (12-2ስአት) ትመገባለህ።	1. አዎ 0. አልመገብም	
310	በ 24 ስዐት ውስጥ ምን ያህል ስአታት ትተኛለህ።	1. ከ 6 ስዐታት ያነሰ 2. 6 ስዐታትና ከዚያ በላይ	
311	ከጀርባ ህመም በተጨማሪ ሌላ ሰር የሰደደ ህመም አለብህ።	1. አዎ 0. የለብኝም	
312	ምላሽህ አዎ ከሆነ፤ ምን አይነት ህመም ነው። (ግለፅ)	_____	
IV. ኦክፒሽናል እና ኧርጎኖሜትሪክ ምክንያት			

ተ.ቁ	ጥያቄዎች	ምላሾች	ምርመራ
401	የጭነት መኪና ለስንት አመታት ነድተሃል።	1. ከ 10 አመት ያነሰ 2. 10 አመትና ከዚያ በላይ	
402	በቀን ስንት ስዐታት ትነዳለህ።	1. ከ 10 ስዐታት ያነሰ 2. ከ 10-15 ስዐታት 3. ከ 15 ስዐታት በላይ	
403	በምትነዳበት ወቅት በመካከል እረፍት ታደርጋለህ።	1. አዎ 0. አላደርግም	
404	ምላሽህ አዎ ከሆነ፤ ለምን ያክል ጊዜ።	1. ከ 30 ደቂቃ ያነሰ 2. 30 ደቂቃና ከዚያ በላይ	
405	ሁልጊዜ እቃ የማንሳት ወይም የመሸከም ስራ ላይ ትሳተፋለህ።	1. አዎ 0. አልሳተፍም	
406	ምላሽህ አዎ ከሆነ፤ ምን ያህል ክብደት ይሆናል።	1. ከ 25 ኪሎ ግራም ያነሰ 2. 25 ኪሎ ግራምና በላይ	
407	ከዚህ ስራ በፊት የነበረህ ስራ ረዥም ስአትን መቀመጥ ይፈልጋል።	1. አዎ 0. አይፈልግም	
408	በምትነዳበት ወቅት (መጎንበስ, ወደ ጎን መጠማዘዝ) የአቀመመጥ ሁኔታ አለህ።	1. አዎ 0. የለኝም	
409	መልስህ አዎ ከሆነ፤ ለመጎንበስ, ወደ ጎን መጠማዘዝ እና በግማሽ መቀመጫህ እንድትቀመጥ ያደረገህ ምክንያት ምን ይመስልሀል።	1. የማይመች መቀመጫ 2. የማይመች የጀሀርባ ድጋፍ 3. የማይመች የመኪና መሪ	
410	የምትነዳው መኪና ተንጠልጣይ መቀመጫ አለው።	1. አዎ 0. የለውም	
411	የሹፌሩ መቀመጫ ተስተካካይ የጀሀርባ ድጋፍ አለው።	1. አለው 0. የለውም	

V. ሳይኮ-ሶሻል ምክንያት			
ተ.ቁ	**ጥያቄዎች**	**ምላሾች**	**ምርመራ**
501	አሁን ባለህ ስራ ደስተኛ ነህ።	1. አዎ 0. አይደለሁም	
502	ስራው አስጨናቂ ነው።	1. አዎ 0. አይደለም	
503	በስራው ተሰላችተህ ታውቃለህ።	1. አዎ 0. አላውቅም	
504	ከቤተሰብ ጋር በቂ ጊዜ ታሳልፋለህ።	1. አዎ 0. አላሳልፍም	

ስለ ትብብርዎ እናመሰግናለን።

Declaration

I, **Tewodros Yosef**, undersigned to declare that this paper is my original work and has not been presented for master's degree in this or another university and that all sources used for this paper have been fully acknowledged.

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