"Prevalence of low back pain and associated risk factors among professional Private car drivers in Dhaka city, Bangladesh"

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List of Abbreviation

LBP:	Low back pain
SPSS:	Statistical Package for the Social Sciences
BMI:	Body mass index
MSD:	Musculoskeletal Disorders
IUB:	Independent University Bangladesh
SPPH:	School of Pharmacy & Public Health
MPH:	Masters of Public Health
NIMH:	National Institute of Mental Health
CDC:	Centers for Disease Control and Prevention

ABSTRACT

Introduction: Back pain is the third most common health problem reported by individuals, after headaches and tiredness. The prevalence of LBP among private car drivers found too high in different studies.

Objectives: The study objectives were to investigate the prevalence of Low Back Pain (LBP) and associated risk factors among private car drivers in Dhaka city and the prevalence association with socio-demographic variables, ergonomic variables & psychogenic factors.

Methods: Cross-sectional study was conducted within 130 private car drivers in Dhaka city age range were 22-55. Data were collected from QUEST Bangladesh as secondary source. They were collected data through face to face interviews using a structured questionnaire.

Results: This study was conducted among 130 participants & prevalence found among private car drivers were 64.6%. Significant associations were found between LBP and driving time of participants (P=0.000), working years (P=0.001), type of bed used (P=0.000) & age (P=0.007).

Conclusion: The prevalence of LBP among car drivers of Dhaka city were found high and its associated with long working hours, age & years of driving.

Keywords: Lower Back pain, Professional Private Car drivers, Risk factors, Prevalence

CHAPTER : I INTRODUCTION

I.1: Background

Low back pain (LBP) is defined as “pain and discomfort, localized below the costal margin and above the inferior gluteal folds, with or without leg pain"(Burton et al., 2006). LBP is a common musculoskeletal disorder (Makishita et al., 2008). Epidemiological studies of low back pain have been performed among general populations and professional drivers in different countries; however the data on low back pain in this professional category is scarce in Bangladesh (Nahar et al., 2010). Back pain is the third most common health problem reported by individuals, after headaches and tiredness (Kresa et al., 2017). The exact cause of increased prevalence of low back pain in populations of professional car drivers is often uncertain (Marras., 2008). The most frequently reported risk factor for low back pain is heavy physical workload such as lifting, awkward posture, and whole-body vibration (Holy et al., 2010). Lifestyle is also considered a risk factor of LBP. Smoking behavior, lack of physical exercise and short sleep hours increase the risk of LBP (Nahar et al., 2010).

LBP prevalence is related to the type of occupations such as driving, manual handling and occupations that involve many improper body movements (Porter & Gyi., 2002). Work-related physical exposures, especially heavy lifting and manual materials handling, working in awkward postures, and whole-body vibration, are well-established risk factors for low back pain (Kresa et al., 2017). Personal health factors, such as smoking, overweight, and lack of physical activity, are often listed among the most important risk factors for LBP, but the scientific evidence is surprisingly vague and inconsistent (Miranda., 2008).LBP is a one of the most common symptoms throughout the general population, and there have been many discussions of occupational low back pain in particular (Holy et al., 2010). There are many reports and monographs regarding low back pain among seated workers, standing workers, truck drivers and those performing heavy labor and so on. LBP of vehicle drivers is

mainly caused by long hours of driving in a restricted posture, car vibration or shocks from roads, and mental stress associated with driving (Miyamoto et al., 2008).

Low back pain distress worsens the quality of life and can forces affected individuals into dependency and inability to care for themselves, in worst cases, the low back pain leads to a loss of physical functions and muscle tone, causes overall weakness, and reduces well-being through exerting periodic or continuous pain (Rufa et al., 2015). Consequently, the loss of normal functioning of an individual can indirectly leads to his social isolation, which could result in less social activities in his spare time, and impaired relations or connections in his close environment, stress in the family and possible loss of income (Sakakibara et al., 2006). Mental disorders often triggered by social disability which may present with insomnia, irritability, anxiety, depression, and somatic disorders (Kresa et al., 2017).

Low back pain is the most common orthopedic problem worldwide. According to some estimates approximately 60-80% of the general population will suffer from low back pain at some point in their lifetime and 20-30% is suffering from low back pain at any given time (Aggarwal et al., 2013). Prolonged sitting, fixed posture, vibration, loss of lumbar lordosis, asymmetric forces acting on the spine and perhaps periodic lifting, any of which individually could lead to musculoskeletal troubles, all of these may cause LBP resulting high prevalence of low back pain (Porter & Gyi., 2002). Professional drivers have been found to be at high risk for developing low back pain. Several studies have suggested that back injuries occur due to ergonomic risk factors such as awkward postural stress, repeated and forceful motions, prolonged working time in constant sitting and long-term exposure to whole body vibration as well as psychosocial factors, such as high quantitative job demands, low coworker support, psychological job demands, and job dissatisfaction (Gangopadhyay and Samrat., 2012).

LBP is accepted because the commonest system disorder moving the final population, with calculable eightieth incidence rate among the active population (Aggarwal et al., 2013). It's conjointly been recognized joined of the main causes for shriveled potency and well-being within the operating people, with resulting money, medical, and socioeconomic implications moving people, employers of organizations, and society at massive (Rufa et al., 2015).

I.2: Rationale of the study

LBP is the most common orthopedic problem worldwide (Kresa et al., 2017). Convincing epidemiological evidence has indicated that professional drivers are at higher risk for low back pain and various spinal disorders, LBP affects each person differently (Samartzis and Grivas., 2001). In some people progress gradually, in others, the symptoms are more serious. Low back pain hurts people in more than their joints, their finances and life styles are affected (Jayson., 1992). Some studies revealed that work is a major contributor to musculoskeletal problems through excessive loading, poor posture, repetitive to movements and other mechanic al causes (Chen et al., 2005). 45.4% of professional drivers experienced LBP due to the ergonomic factors associated mainly with uncomfortable seats and uncomfortable back supports and the psychosocial factors associated with limited resting times during the workday and heavy traffic on bus routes (Aggarwal et al., 2013). There is very little information about low back pain in car divers in our country. Some authors have suggested that the scarcity of reports from low income countries may be due to the fact that low back pain pales in comparison with other health problems and therefore hardly seems worth mentioning (Porter & Gyi., 2002).

These types of study were not conducted in Bangladesh among Professional Private Car drivers. So it is also very important to know about prevalence of LBP among private car drivers. This study expected to determine prevalence and risk factors for LBP among car drivers. This study also expects to disseminate the findings of this study to take necessary steps to minimize low back pain and reduce the costs and injuries associated with ergonomic hazards of private car drivers. This is also a reason for conduct this study.

I.3: Research Question

What is the prevalence of low back pain and associated risk factors among professional car drivers in Dhaka city?

I.4: Objectives of the study

I.4.1: General Objectives

To find out the prevalence of low back pain and associated risk factors among professional car drivers in Dhaka city

I.4.2: Specific Objectives

- To determine the magnitude of low back pain,
- To find out risk factors associated with low back pain,

I.5: List of variables

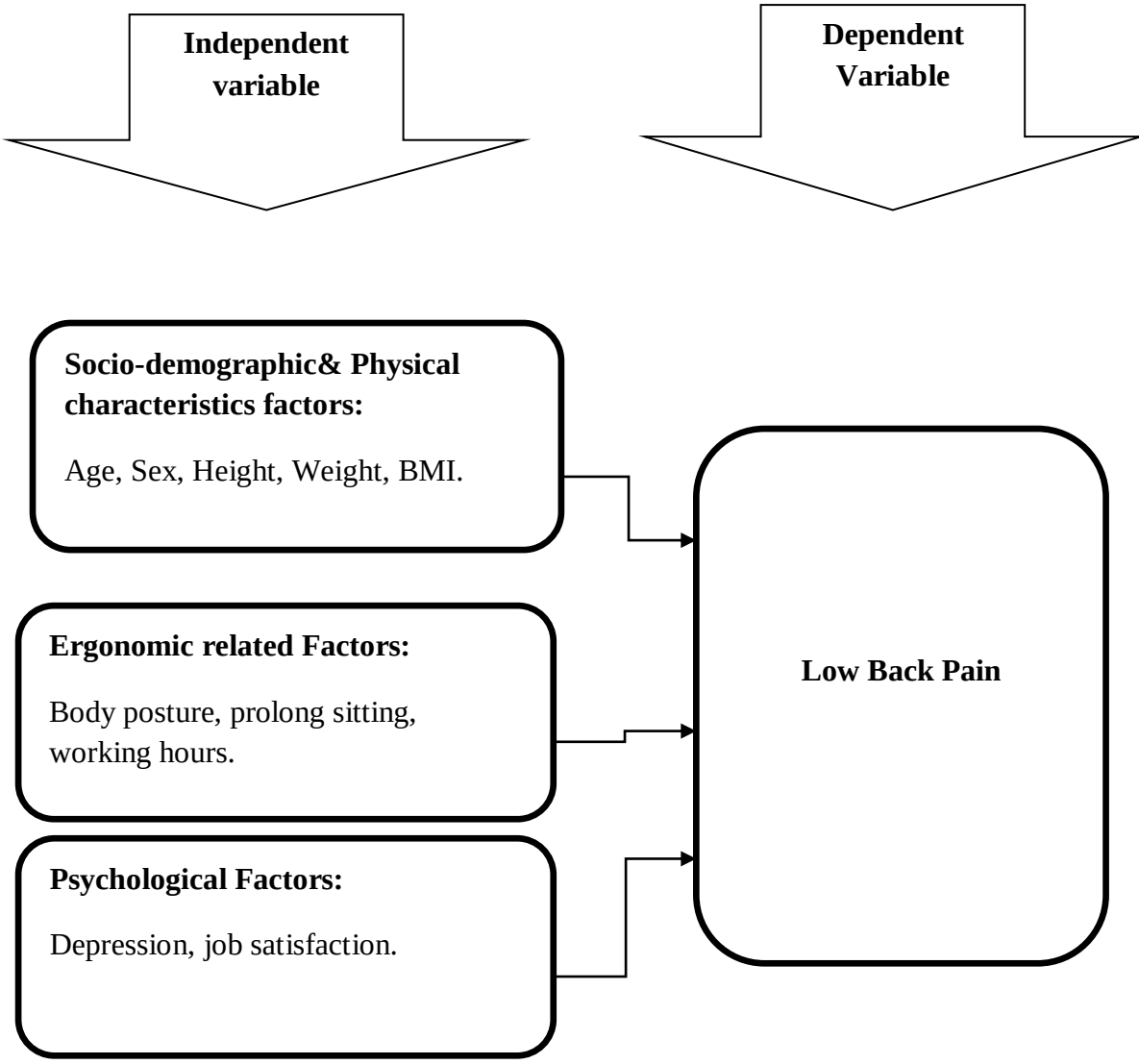

Fig: List of Variable

I.6: Operational Definition

Prevalence

According to NIMH Prevalence is the total number cases of a disease present in a given population at a specific time.

Pain

According to CDC Pain is defined as an unpleasant sensory and emotional experience associated with acute or potential tissue damage, or describe in terms of such damage.

Low back Pain (LBP)

A person with low back pain has discomfort in one of the structures of the lower back. Low back pain may be caused by injury, inflammation, or infection. Common causes of low back pain include muscle strains and muscle spasms. Additional causes of back pain include infections of the lower back, arthritis of the spine, and a herniated disk (Burton et al., 2006).

Posture

Posture is the position or attitude of the body either with support during muscular inactivity or by means of coordinated action of muscle working to maintain stability (Bao et al., 2009).

Body mass index (BMI)

A standardized estimate of an individual's relative body fat calculated from his or her height or weight. The formula for calculating BMI is weight in kilogram (kg) divided by height in meters (m) square (Hall & Cole., 2006).

Four-point pain index

The four-point pain index is a categorical pain has four categories: 0=No pain, 1= Mild pain, 2=Moderate pain, 3= Severe pain. Patients are asked to select the category the best describe their pain.

Ergonomics

Ergonomics commonly refers to designing work environments for maximizing safety and efficiency ergonomics is the science of optimizing the job to the worker. It is the science that is used to design an appropriate workstation in the student where they study. As a student you probably spend many hours in front of books, computers and sitting in lectures. This lifestyle can give students neck, back and shoulder problems. The Student Health Centre can give advice on how to avoid study related disorders, or help you when have already surfaced.

Professional car drivers

A car driver is a person employed to drive a passenger motor vehicle.

Originally, such drivers were often personal employees of the vehicle owner, but now in many cases specialist individual drivers provide both driver and vehicle for hire, although there are service companies that just provide the driver& some apps like UBER , Pathao etc.

Back trauma

Any kind of accident or trauma to the back.

Chapter : II Literature Review

Lower back pain as a form of musculoskeletal disorder is synonymous with work-related driving (Sakakibara et al., 2006). There is a catalogue of published works that supports this view, which indicates a high prevalence of acute and chronic pain associated the lower thoracic and lumbar regions. In minor cases, this is usually localized to soft tissues, tendons, ligaments and bones but can also include long-term conditions such as sciatica and spinal degeneration and tumors in rare occurrences (Bovenzi and Hulshof., 1999). Some of this damage is as a result of the natural aging process or as a result of preexisting health conditions that may have a bearing on the muscle or skeletal systems (Jayson., 1992).

LBP is the world's most disabling condition, involving all populations and crossing all boundaries Such pain leads to tremendous socioeconomic and healthcare consequences. In the United States alone, the direct and indirect costs associated with low back pain surpass 90 billion USD per year, with similar adjusted rates in different countries (Samartzis and Grivas., 2001).

Out of the 246 study subjects the prevalence of low back pain among car drivers of Dhaka city and it was found that 78% of taxi driver reported LBP during past 12 months which lasted for more than a day. There are various epidemiological studies of professional car drivers in other countries reported prevalence range of LBP from 40 to 51% (Nahar et al., 2010). A taxi driver had a significantly higher prevalence of LBP ($P < 0.001$) with 51% reportedly having low back pain in the past 12 months. The crude estimates of 1-year LBP prevalence were 37, 45, 51 and 57%, respectively (Chen et al.,2005). A study found prevalence rate of 77.0% of musculoskeletal pain among occupational drivers (Ojo et al., 2014).

Out of the 246 study subjects were car drivers aged more than 40 years compared to drivers of age 25-40 years (Nahar et al., 2010). Among the respondents 93.8 % are

men and 6.2% women, aged between 23 and 66 years. Average age is 41.6 years (Kresaet al., 2017). Out of 110 subjects, the mean age was 44.8 ± 11.1years, more than average had secondary education (54.0%) and a larger percentage (91%) were married (Ojo et al., 2014). The average age of respondents was 51.5yr old and the average length of service was 14.1 yr. The prevalence of LBP was 20.5 percent of respondents (Miyamoto et al., 2008). Age had statistical significance on the occurrence of low back pain among professional drivers. The older professional drivers were the stronger their low back pain (Kresa et al., 2017).

Out of the 246 study subjects were car drivers that driving more than 7 hours/ day (8-16 hour/day) increase the risk by about 4 times than those who drive 1-7 hour/day (Nahar et al., 2010).

A study by Chen et al., 2005 shown, stratified by daily driving duration (≤ 4, 4–8, 8–10 and >10 h), the crude estimates of 1-year LBP prevalence were 37, 45, 51 and 57%, respectively. (Chen et al., 2005). This is equivalent to a crude prevalence odds ratio of 1.79 (CI 1.09–2.95) comparing driving >4 h/day with driving ≤ 4 h/day. that the number of hours spent in driving per week was significantly related to pain intensity (Ojo et al., 2014).

The risks of low back pain identified exposures to driving a car for more than half working day >20 h /week and >4 h/day (Porter and Gyi., 2002).

With most studies tending to concentrate on physiological factors (Magnusson et al., 1996) other occupational risk factors such as working hours (Sung., 2010), mileage driven (Sakakibara et al., 2006), poor ergonomic posture and vibration from the vehicle and pre-existing individual medical conditions can play a major causative role. For low back pain there appears to be a strong associated with prolonged sitting posture (Sung., 2010), frequent lifts and cigarette smoking (Bongeret et al., 1990)

Psychosocial hazards ranging from the effects of working in isolation (Bourdorias., 2000), low support (Raanaas and Anderson., 2008), low control, low job satisfaction, working unsociable hours (Apostolopoulos et al., 2012), night work (Ulh and Marqueze., 2012) through to threats from physical assault and mental overload (Makishita and Matsunaga., 2008). In a study by (Marras et al., 2008) it was reported psychosocial hazards were responsible for 28%-84% of risk of MSD (particularly arms and upper body) and 14%-63% of risk to LBP (Rufa et al., 2010).

CHAPTER: III METHODOLOGY

III.1: Study Design

Cross-sectional study was conducted to find out the prevalence of low back pain and associated risk factors among professional car drivers in Dhaka city.

III.2: Study Area

This study was conducted in different places (Dhanmondi, Mohakhali, Mohammadpur, Uttara, Mirpur) of Dhaka city.

Fig: Dhaka city Map

III.3: Study Population

The study population was consisting of professional car drivers in different area in Dhaka city**.**

III.4: Data Source

Data are collected as a secondary source from Quest Bangladesh with their permission (Annexure 1).

III.5: Study Period

The duration of the study conducted over six months. The study was conducted from January 2018 to June2018. The entire period were divided into different study related activities**.**

III.6: Sample size

Formula of one-sample population was used calculating sample size by QUEST Bangladesh.

$$n = \frac{Z^2 pq}{d^2}$$

Here, n= Desired sample size.

z= standard normal deviate usually set at 1.96 which corresponds to 95% confidence level.

P=estimated proportion rate of low back pain among professional car driversis 56.7% (prevalence of 78%, 51%, 77%, 20.5%, 57%) were found in different study. So, all data analysis my average prevalence is 56.7%.

q= 1-p

d= degree of accuracy desire, usually set at 0.05%.

Required Sample Size:

$$n = \frac{Z^2 pq}{d^2}$$

$$n = \frac{(1.96)^2 * .56 * (1-.56)}{(0.05)^2}$$

$$n = 378.71 = 378$$

Expected sample size was 378 at QUEST Bangladesh but there sample size were small (130) due to unavailability of patient in such short period of time & financial limitation. In this study we considered all those collected data from QUEST Bangladesh.

III.7: Sampling Procedure

Sample was selected purposefully to interview the study population considering the inclusion & exclusion criteria. This followed the eligibility of study Samples and sample size requirement of different places, car office, garage & car workshop were selected purposefully for collecting sample.

III.8: Inclusion & exclusion criteria

III.8.1: Inclusion criteria

Age 18 or >18 years old professional car drivers were included in this study.

More than one year driving experience of car drivers were included.

The subject who were willing to participate in the study.

The professional car driver who drive in Dhaka city

III.8.2: Exclusion criteria

The subject who were not willing to participate in the study.

Subject who (those suffering acute illness) were medically unstable.

III.09: Data collection instrument/tools

An interview administered structured questionnaire design to collect information on related to low back pain among the car drivers in Dhaka city that prepared in advance and evaluated by the principle supervisor before data collection. The questionnaire (Annexer: 2) was consisting of 3 sections of items. The first section includes items on personal information. The second section include items on socio-demographic characteristics and background information of the car drivers, the third section items include ergonomic and psychological factor of low back pain and its severity, treatment. During the interview use of pen, paper, written questionnaire, file, Consent paper.

III.10: Data collection procedure

Data collection Procedure was face to face interview with structured questionnaire form. Prior to data collection they conducted a pilot study with this questionnaire in Chattogram City for justifying questionnaire. After pilot study they make some change in questionnaire and final questionnaire (Appendix) were finalized.

III.11: Data management and analysis

After collection of data, all interviewed questionnaire checked for its completeness, correctness and internal consistency to exclude missing or inconsistent data and those were discarded. Corrected data entered into the computer. The data we reanalyzed by using the statistical software namely SPSS (statistical package for social sciences) version 26.0. For association I used chi-square test, p were measured.

III.12: Ethical consideration

I use this data as a secondary data for my thesis to QUEST BANGLADESH with their permission (Annexer:1). Written informed consent they took at the time of enrolling the respondents. However verbal consent taken when required. In consent form, the title, aim of the study, data collection procedures, required time for data collection, confidentiality and anticipated use of the result of the study, written in plain and simple Bengali language and simple brief were given to each respondent before data collection. All respondents informed that they were free to leave or to refuge to take part in this study at any time. The personal information of the respondents kept totally confidential. The information given by the respondents analyzed using code number so that nobody can identify them.

III.13: Inform consent

Written consent (Appendix) was given to all participants prior to completion of the questionnaire. The participants were explained about his or her role in this study. A written consent form was received from every participants including signature. So the participant assured that they could understand about the consent form and their participation was on voluntary basis. The participants were informed clearly that their information would be kept confidential. It was assured the participants that the study would not be harmful to them. It was explained that there might not a direct benefit from the study for the participants but in the future cases like them might get benefit from it. The participants have the rights to withdraw consent and discontinue participation at any time without prejudice to present or future care. Information from this study was anonymously coded to ensure confidentiality and was not personally identified in any publication containing the result of this study.

CHAPTER: IV RESULTS

To explore the prevalence of LBP among the car drivers in Dhaka city hundred thirty car drivers in Dhaka city were taken as a sample. There was no female private car driver data found, as in our country there are very few number of professional female private car driver. The response rate of completed questionnaires was hundred percent. The questionnaires questions were fully completed by hundred thirty drivers on which the analysis was conducted.

Age Group (In Years)	**Number (n)**	**Percent (%0**
18-27	13	10.0
28-37	59	45.4
38-47	49	37.7
>47	9	6.9
Total	130	100
Mean±SD=36.34±7.156		

Table 1: Distribution of respondents based on age (N=130)

Age of the participants

The study was conducted on 130 participants. The mean age of the participants were 36.34 years. The minimum age was 22 years and maximum 55 years. The highest number of participants were at the age 45 years.

BMI of the participants

Among the total participants, Normal BMI (range 18.5-24.9) were 65.4% (N=85), Overweight (range 24.9-29.9) was 31.5% (N=41), Underweight (<18.5) was 1.5% (N=2) and Obesity (>35) was 1.5% (N=2). The most number of the respondent were normal BMI as seen in figure.

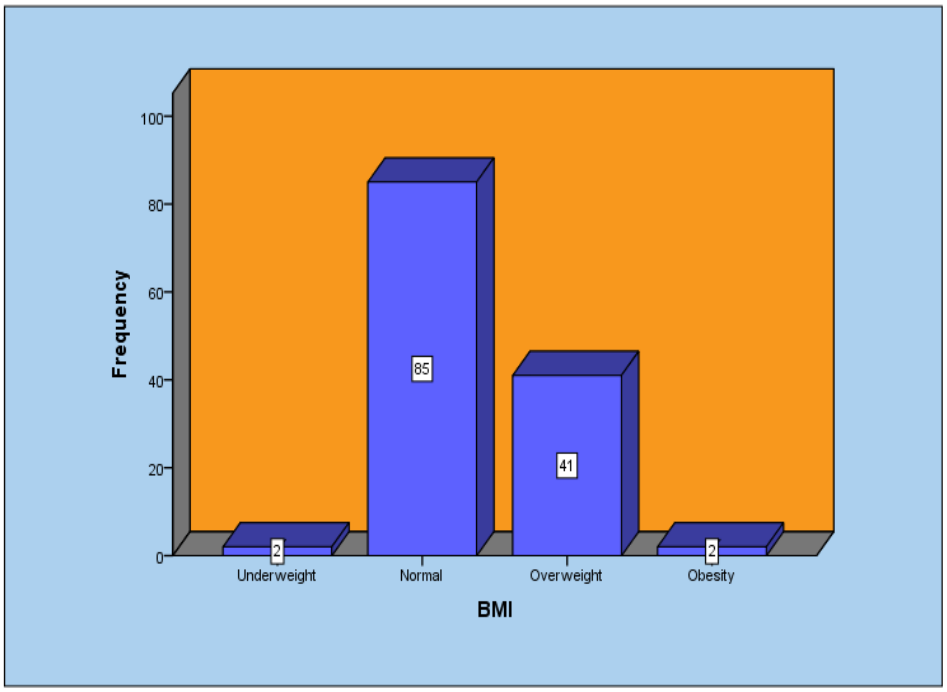

Figure 1: BMI of participants

Prevalence of LBP

This study found that, among the 130 participants, 64.6% (N=84) car drivers in Dhaka city are suffered from LBP as seen in figure.

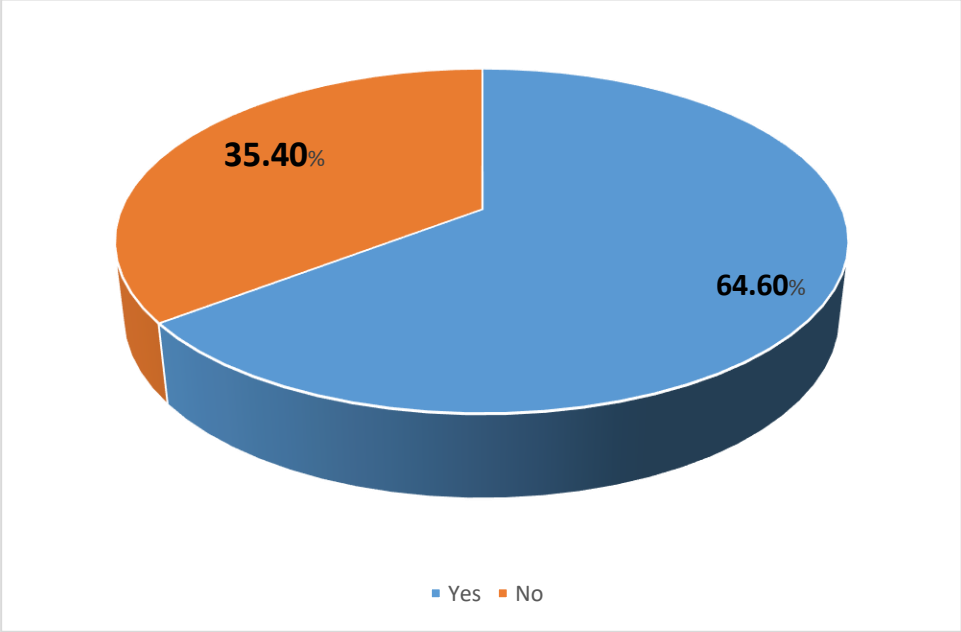

Figure-2: Prevalence LBP among car drivers in Dhaka city.

Severity of pain

The participants who suffered from LBP, the severity of pain were in three-point index (1= Mild pain, 2= Moderate pain & 3= Severe pain) is 47.62% (N=40) Mild, 48.81% (N=41) Moderate, 3.57% (N=3) Severe. The majority of participants who suffered from LBP the severity of pain were moderate as seen in figure.

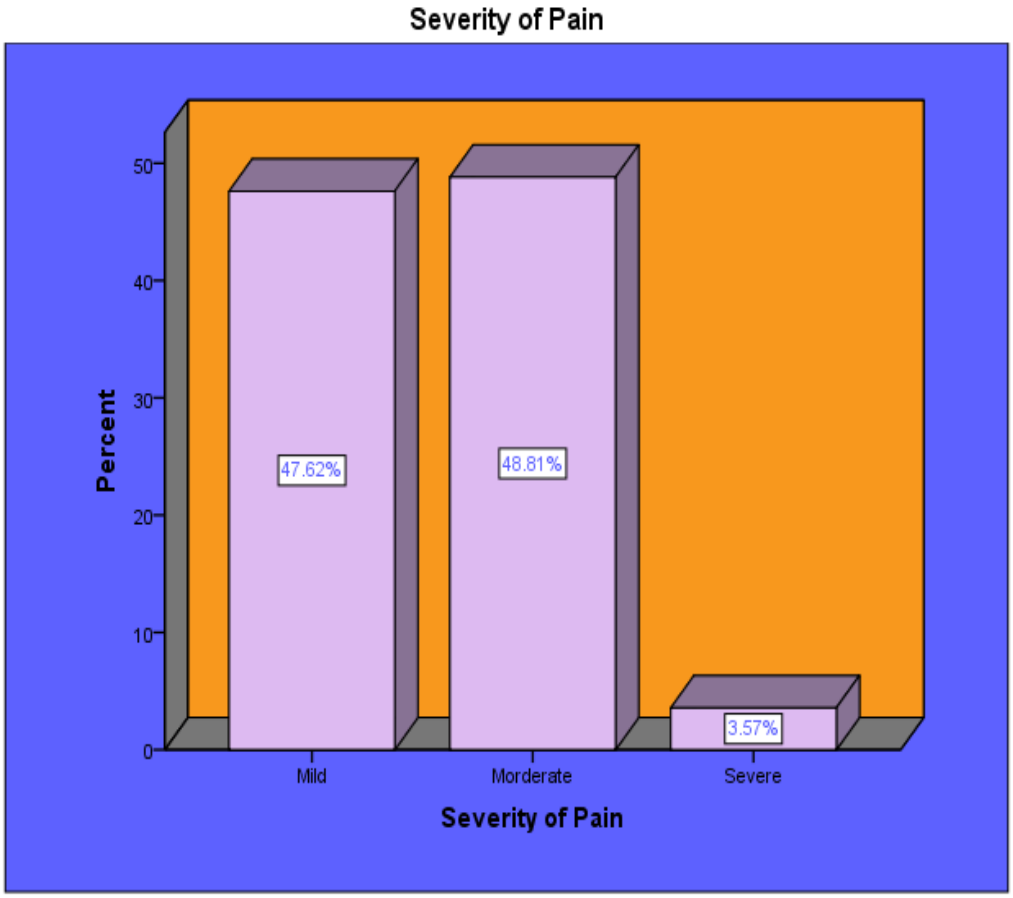

Figure-3: Showing severity of Pain

Behavior of pain

Study found among the car drivers who had been suffering from LBP, 97.62% (N=82) felt intermittent LBP & 2.38% (N=02) constant LBP.

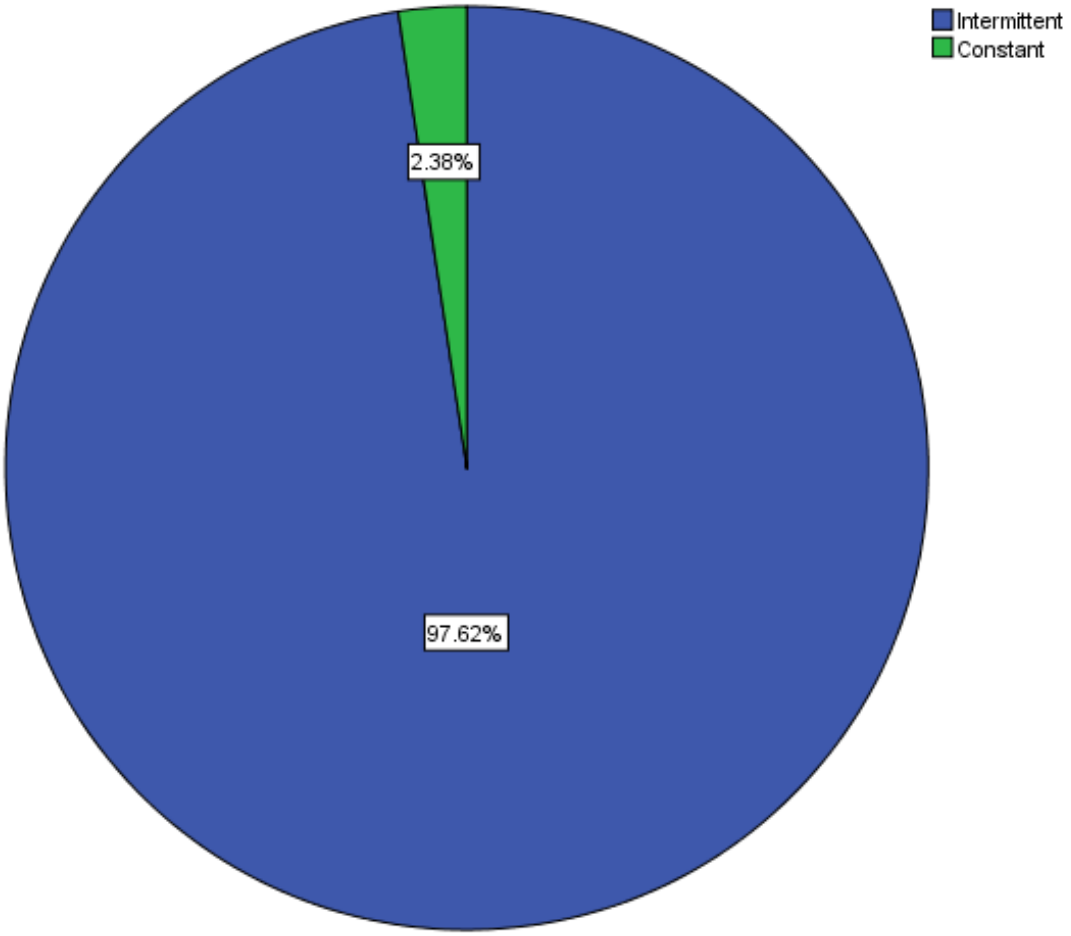

Figure-4: Showing Behavior of Pain

Site of Pain

In this study among 130 subjects, the car drivers in Dhaka city who had been suffering from LBP, 86.90% (N=73) had suffered from central LBP & 13.10% (N=11) had suffered from peripheral LBP.

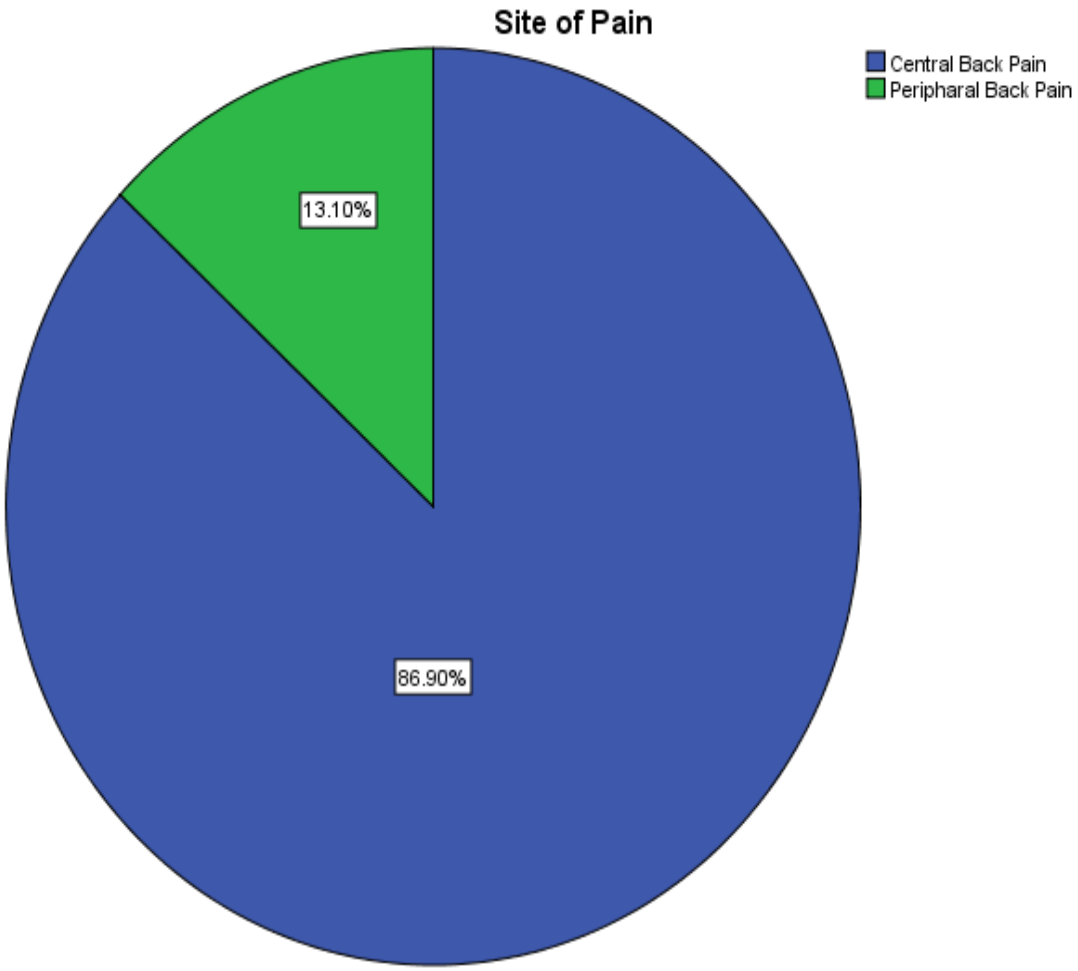

Figure-5: Showing Site of Pain

Position Maintain Most of Time by Participants

The car drivers in Dhaka city who had been suffering from LBP, 64.6% (N=84) had maintained sitting position.

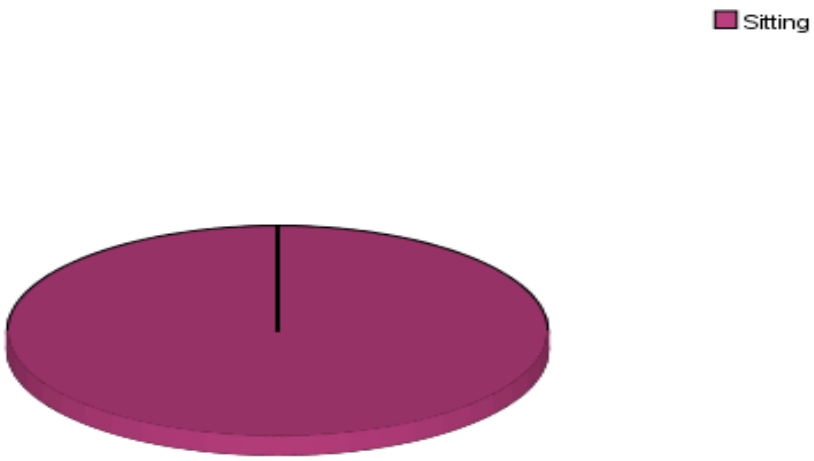

Figure-6: Position maintain most of time by participants

Duration of Working Experience

Among 130 Participants, the car drivers in Dhaka city who had been suffering from LBP, 0.0% (N=0) had working <1 years, 20.0% (N=26) had working 2-5 years and 44.6% (N=58) had working more than 5 years. The drivers who had not been suffering from LBP, 4.6% (N=6) had working <1 year, 14.6% (N=19) had working 2-5 years and 16.2%(N=21) had working more than 5 years. P value <0.05% is significant and >0.05 % is not significant as seen in figure

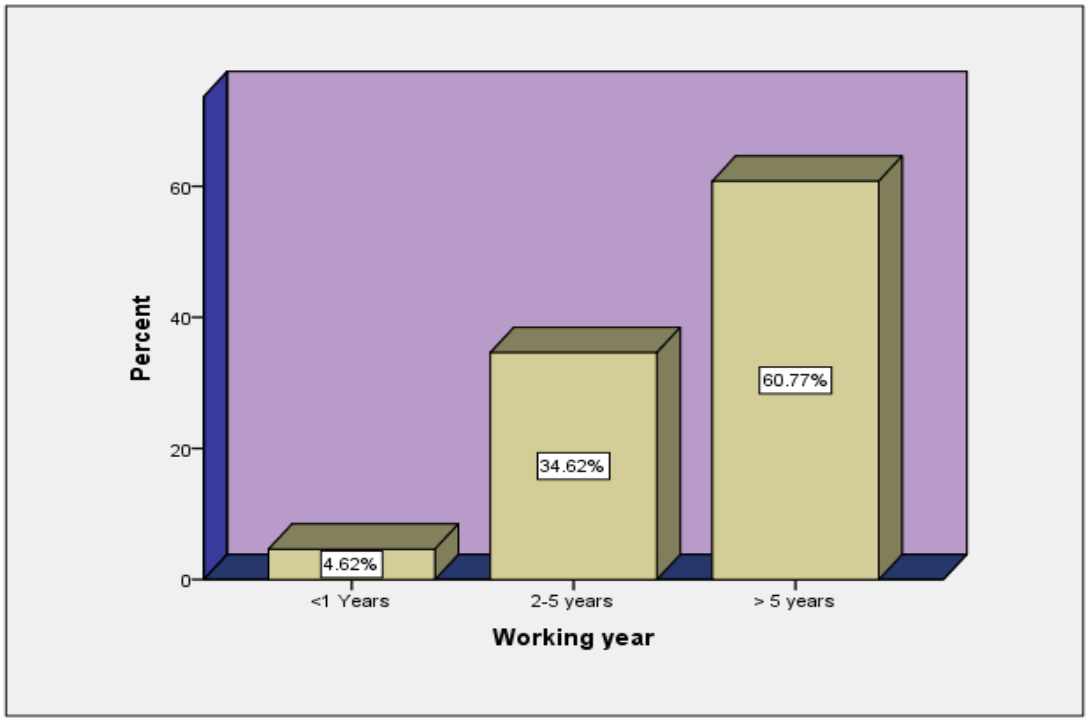

Figure-7: Working experience of participants

Driving time of Participants

Out of 130 subjects, the car drivers in Dhaka city who had been suffering from LBP, 3.8% (N=5) had driving 0-4 hours, 24.6% (N=32) had driving 4-6 hours and 36.2% (N=47) had driving more than 6 hours. The drivers who had not been suffering from LBP, 9.2% (N=12) had driving 0-4 hours & 20.0% (N=26) had driving 4-6 hours and 6.2% (N=8) had driving more than 6 hours as seen in figure

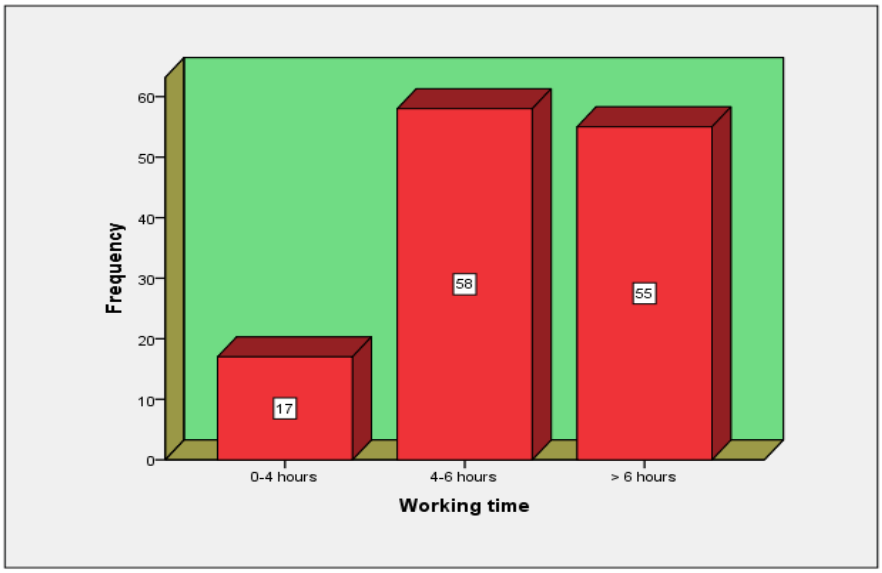

Figure-8: Driving time of participants

Types of bed used by Participants

In 130 Participants, the car drivers in Dhaka city who had been suffering from LBP, 25.4% (N=33) had used soft bed, 10% (N=13) had used firm bed and 29.2% (N=38) had used hard bed for sleeping. Drivers who had not been suffering from LBP, 16.9% (N=22) had used soft, 16.9% (N=22) had used firm bed & 1.5% (N=2) as seen in figure

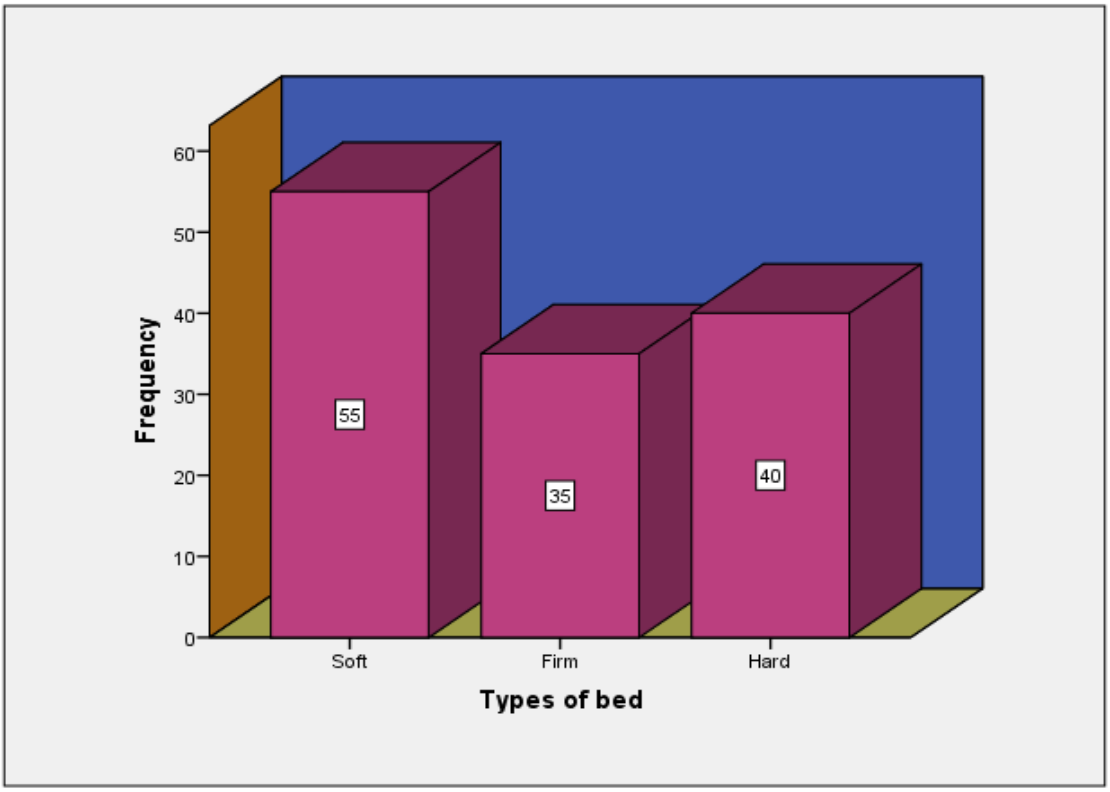

Figure-9: Showing types of bed used by participants

Back trauma of participants

The participants who were suffering from LBP, only 2.3% (N=3) got back trauma and remaining 97.7% (N=127) did not have any back trauma as seen in figure

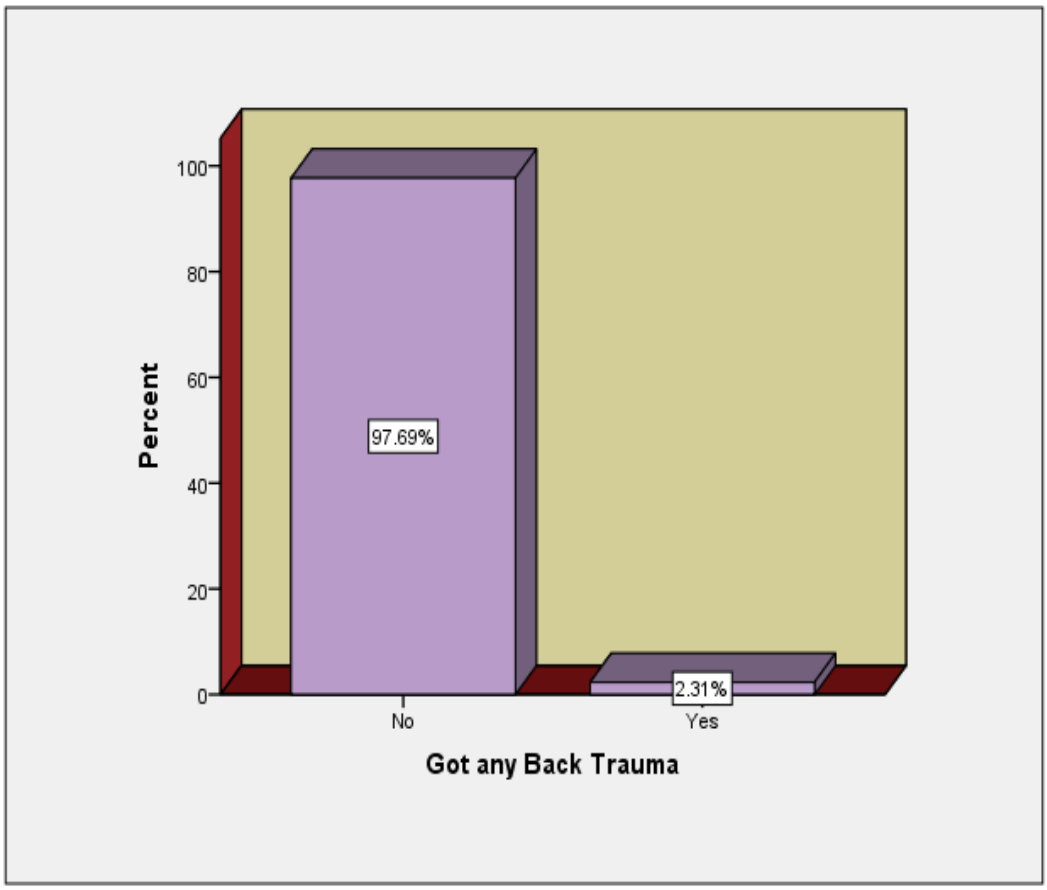

Figure-10: Showing back trauma of prevalent subjects

Feeling depression of participants for LBP

Total of participants, who were suffering from LBP, 83.3% (N=70) feel depression for LBP and remaining 16.7 % (N=14) did not feel depression for LBP as seen in figure

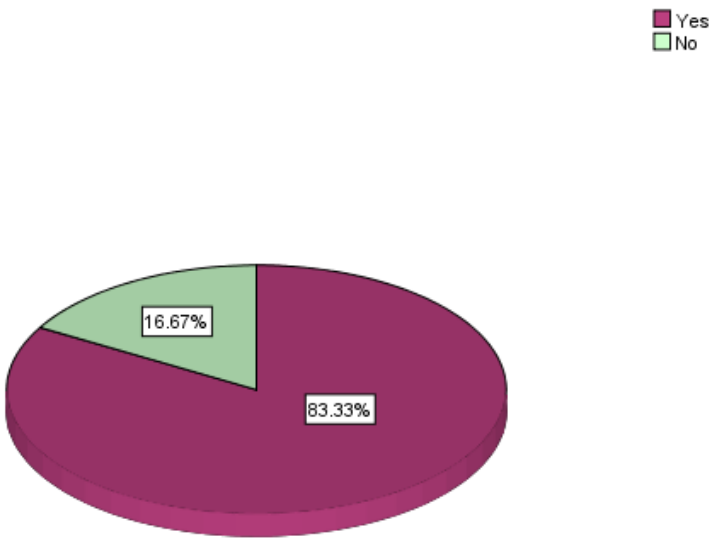

Figure-11: Showing feeling depression of prevalent subjects for LBP

Treatment seeking & behavior

Among 84 affected participants who were suffering from LBP, 77.4% (N=65) took treatment and remaining 22.6% (N=19) did not take any treatment for their LBP. Among the participants who took treatment for their LBP, 72.3% (N=47) took only medication, 1.5% (N=1) took surgery & 26.2% (N=17) took medication plus physiotherapy as seen in figure

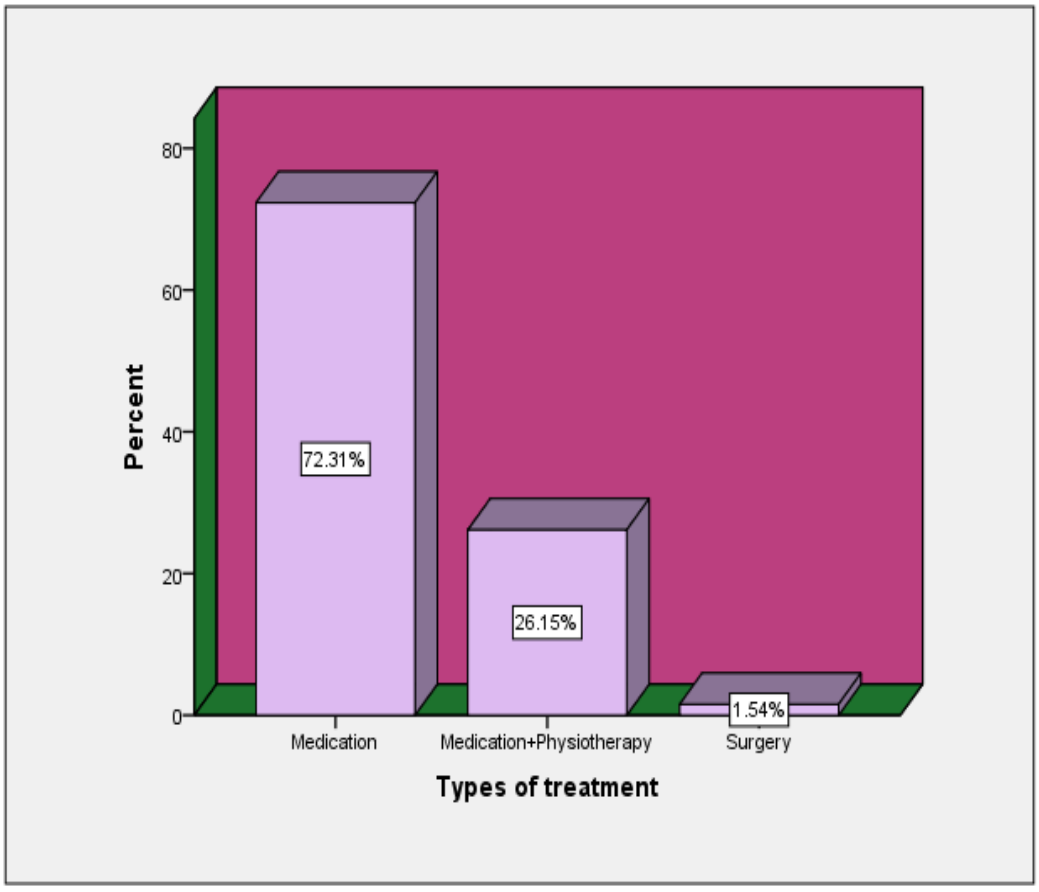

Figure-12: Distribution of treatment seeking behavior.

Outcome of Treatment

The participants who took treatment for their LBP, 92.3% (N=60) had feel better, & 7.7% (N=5) had no change after treatment as seen in figure

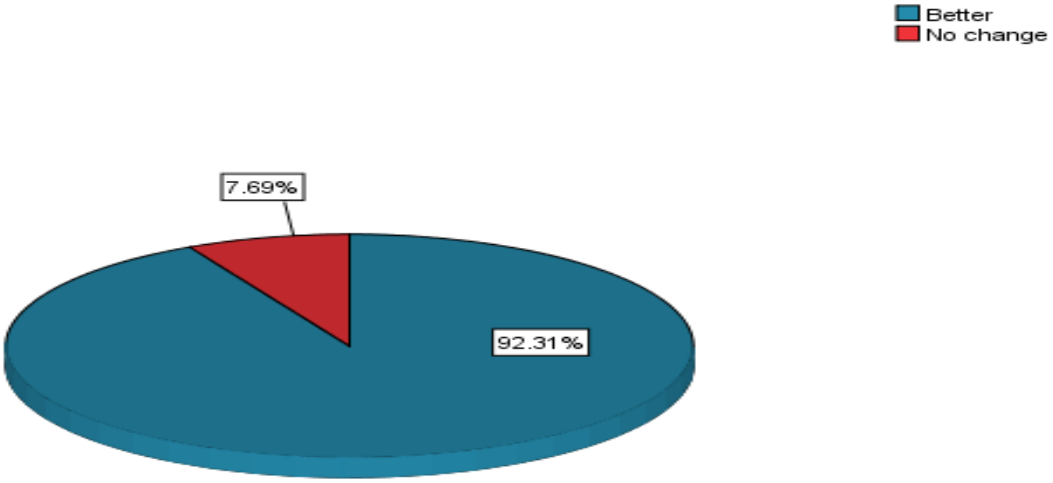

Figure-13: Distribution of outcome of treatment

Table-2: Distribution of the participant's Satisfaction with their profession (N=130)

Have Satisfaction in your profession					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	99	76.2	76.2	76.2
	No	31	23.8	23.8	100.0
	Total	130	100.0	100.0	

Here, 76.2% was the maximum satisfaction of the participants with their profession where n=99 & the minimum satisfaction were 23.8 among 31 participants.

Chi-Square Test

Association between LBP with Variables

Among 130 car drivers, Prevalence of LBP was highest at age 30-40 years (N=60) and lowest was at age >50 years (N=1).

Table-3: Relation between LBP & age

Age Group	Low Back Pain				Chi square test
	Yes		No		
	Count	% of total	Count	% of total	$X^2 = 12.175$
<30	16	12.3%	21	16.2%	df = 3
30-40	41	31.5%	19	14.6%	
40-50	26	20.0%	6	4.6%	P = .007
>50	1	0.8%	0	0.0%	
Total	84	64.6%	46	35.4%	

p value <0.05% is significant.>0.05 % is non-significant.

The analysis indicates that the Age of the respondents were statically significant with LBP.

Association between LBP & BMI

Among the total participants, Normal BMI was 65.4% (N=85), Overweight was 31.5% (N=41), underweight was 1.5% (N=2) and Obesity 1.5% (N=2). P value <0.05% is significant and >0.05 % is not significant.

Table-4: Association between LBP & BMI

LBP		BMI				Total	Chi square test
		Underweight	Normal	Overweight	Obesity		
Yes	Count	2	49	31	2	84	X^2 = 6.163 [a] df-3 P = .104
	% of total	1.5%	37.7%	23.8%	1.5%	64.6%	
No	Count	0	36	10	0	46	
	% of total	0.0%	27.7%	7.7%	0.0%	35.4%	

p value <0.05% is significant and >0.05 % is not significant.

The analysis indicates that the BMI of the respondents were not significant.

Table-5: Association between LBP & Position maintain most of time by participants

Low Back Pain	Position maintain most of time		
	Sitting		Total
	Count	% of total	
Yes	84	64.6%	64.6%
No	45	35.4%	35.4%

No statistics are computed because position maintains most of the time is a constant.

Table 6: Association between LBP & Working Experience

Low Back Pain		Duration of Working Experience				Chi square test
		<1years	2-5 years	>5 years	Total	$X^2 = 14.554^a$
Yes	Count	0	26	58	84	df = 2
	% of total	0.0%	20.0%	44.6%	64.6%	
No	Count	6	19	21	46	P = .001
	% of total	4.6%	14.6%	16.2%	35.4%	

p<_ 0.05 = Significant. P > 0.05 = Non-significant.

Table shown P = .001 < 0.05 indicate as significant that represents, there were significant relation formed between LBP & Working Experience.

Table-7: Association between LBP & driving time of participants

Low Back Pain		Driving time of participants				Chi square test
		0-4 hours	4-6 hours	>6 hours	Total	$X^2 = 21.923$
Yes	Count	5	32	47	84	df = 2
	% of total	3.8%	24.6%	36.2%	64.6%	P = .000
No	Count	12	26	8	46	
	% of total	9.2%	20.0%	6.2%	35.4%	

p<_ 0.05 = Significant., P > 0.05 = Non-significant .

The analysis indicates that the driving time of the respondents were significant.

Table-8: Association between LBP & types of bed used by participants

Low Back Pain		Types of bed used by participants				Chi square test
		Soft	Firm	Hard	Total	$X^2 = 28.218^a$
Yes	Count	33	13	38	84	
	% of total	25.4%	10.0%	29.2%	64.6%	df = 2
No	Count	22	22	2	46	
	% of total	16.9%	16.9%	1.5%	35.4%	P = .000

p<_ 0.05 = Significant ., P > 0.05 = Non-significant .

The analysis indicates that the use of bed the respondents were significant

CHAPTER: V DISCUSSION

In this cross-sectional study, there were 130 participants taken to find out the prevalence of LBP among car drivers in Dhaka city. The result of this study showed that the prevalence rate is 64.6%. This finding is very close to the 78% rate reported for taxi driver in Dhaka city, Bangladesh in 2010 (Nahar et al., 2010) and a 51% rate reported for taxi drivers had a significantly higher prevalence of LBP ($P < 0.001$) (Chen et al., 2005).

Study found among 130 car drivers in Dhaka city were taken as a sample to explore the prevalence of LBP among the car drivers in Dhaka city. The response rate of completed questionnaires was 100%. From this study it was found that among the 130 participants, 64.6% (N=84) car drivers in Dhaka city are suffered from LBP. The questionnaires questions were fully completed by 130 drivers on which the analysis was conducted. Where other journal showed, Out of the 246 study subjects the prevalence of LBP among car drivers of Dhaka city and it was found that 78% of taxi driver reported LBP during past 12 months which lasted for more than a day. There are various epidemiological studies of professional car drivers in other countries reported prevalence range of LBP from 40 to 51% (Nahar et al., 2010).A taxi driver had a significantly higher prevalence of LBP ($P < 0.001$) with 51% reportedly having LBP in the past 12 months. the crude estimates of 1-year LBP prevalence were 37, 45, 51 and 57%, respectively (Chen et al. 2005). A prevalence rate of 77.0% of musculoskeletal pain among occupational drivers (Ojo et al., 2014).

I found out of the 130 study subjects, the mean age of participants was 36.30 years ($P=0.007$) and Prevalence of LBP was highest at age 30-40 years (N=60) and age are not statistically significant with LBP of car drivers. A study by Ojo et al., 2014 in America also found that the mean age was 44.8 ± 11.1years. (Ojo et al., 2014). Another study by Miyamoto et al., 2008 was found The average age of respondents was 51.5yr old and the average length of service was 14.1 yr. The prevalence of LBP was 20.5 percent of respondents. (Miyamoto et al., 2008). Age had positive effect on

the occurrence of low back pain among professional drivers. The older professional drivers were the stronger their low back pain (Kresa et al., 2017).

In this study it was found that, out of 130 subjects, the car drivers in Dhaka city who had been suffering from LBP, 3.8% (N=5) had driving 0-4 hours, 24.6% (N=32) had driving 4-6 hours and 36.2% (N=47) had driving more than 6 hours. The drivers who had not been suffering from LBP, 9.2% (N=12) had driving 0-4 hours & 20.0% (N=26) had driving 4-6 hours and 6.2% (N=8) had driving more than 6 hours. (P=0.000).

Working time are highly statistically significant with LBP of car drivers. A study by Nahar et al., 2010 in Dhaka city also found that the car drivers that driving more than 7 hours/ day (8-16 hour/day) increase the risk by about 4 times than those who drive 1-7 hour/day (Nahar et al., 2010). Another study by Chen et al., 2005 shown, stratified by daily driving duration (≤ 4, 4–8, 8–10 and >10 h), the crude estimates of 1-year LBP prevalence were 37, 45, 51 and 57%, respectively (Chen et al., 2005).

In this study 76.2% satisfied and 23.8% ware not among 130 participants. Psychosocial hazards ranging from the effects of working in isolation (Bourdorias., 2000), low support (Raanaas and Anderson., 2008), low control, low job satisfaction, working unsociable hours (Apostolopoulos et al., 2012), night work (Ulh and Marqueze., 2012) through to threats from physical assault and mental overload (Makishita and Matsunaga., 2008)In a study by (Marras et al., 2008) it was reported psychosocial hazards were responsible for 28%-84% of risk of MSD (particularly arms and upper body) and 14%-63% of risk to lower back (Rufa et al., 2010).

Limitations

There were a number of limitations and barriers in this research project which had affected the accuracy of the study, these are as follow:

- First of all, time and financial problem of the study which had a great deal of impact on the study.
- The samples were collected only from some car office, garage, car workshop of Dhaka city and the sample size was too small, so the result of the study could not be generalized to the whole professional car drivers in Bangladesh.
- Prevalence was identified by a questionnaire, and the validity and reliability of this method may be questionable.
- This thesis work was done by postgraduate student. Therefore, the researcher had limited experience with techniques and strategies in terms of the practical aspects of research. As it was, the first survey of the researcher so might be there were some mistakes that overlooked by the supervisor.

CHAPTER: VI CONCLUSION & RECOMMENDATION

LBP is a third most common health entity that leads disability in the world, and prevalence of LBP among car drivers too high as well. The study concluded that prevalence of LBP among car drivers in Dhaka city is quite high. This study demonstrates that non-specific low back pain does occur in car drivers and that it has an effect on their lives. It has shown an association of low back pain with age, working year, and driving hours. Because of the nature of the study design (cross-sectional) no specific cause, effect or inferences can be drawn. The high prevalence of LBP among car drivers and its association with poor lifestyle habits, and psychological factors highlight a need for provide proper life skills training, postural education about how to drive, take a break during long drive, giving education about sitting, reduce the working hour, and counseling.

Recommendation:

Based on the study findings, the following recommendations are given:

- Government and non-Government organizations need to plan awareness programs about LBP.
- Counseling: about LBP, Lifestyle modification, Education about posture.
- Continued and regular study in this area should play an essential part in improving quality of life of the car drivers. Recommendations for other researcher as follows:
    - Increasing the number of the participants and conduct the research in different places.
    - Including both subjective and objective to find out the objective.

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