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Original Research Article

A Cross-Sectional Survey on Low Back Pain Among Long Distance Truck Drivers in Cuttack City

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Abstract:

Aim: To analyze the relationship between low back discomfort and weariness among truck drivers.

Method: An anonymous poll was completed by 91 active commercial drivers from 4 different locations. The Oswestry Disability Index was used to evaluate low back pain (ODI). The Brief Fatigue Inventory was used to gauge levels of fatigue. The relationship between LBP and fatigue was measured using multiple linear regression (MLR).

Results: After adjusting for age, BMI, work satisfaction, years of driving experience, and kilometres travelled, MLR demonstrated that increasing low back pain is a significant predictor of increased weariness ($p < 0.002$).

Conclusion: Based on these findings, it is clear that this population's back pain and weariness are significantly correlated. This shows that addressing the root causes of back discomfort in drivers may help to decrease their degree of weariness and hence enhance road safety.

Keywords: Back pain, Truck drivers, Cuttack, Factors, cross-sectional study

Introduction

Road safety is a significant matter of public health. The National Highway Traffic Safety Administration reports that there were 30,797 fatal motor vehicle collisions in 2009, which resulted in 33,808 fatalities. These crashes are thought to have cost $230.6 billion. Commercial drivers are a crucial part of the safety of the highway. 3,215 large trucks, or 7% of the vehicles involved in fatal crashes, were combination trucks, with 73% of these large trucks [1]. Driver safety has been found to be negatively impacted by fatigue [2,4]. Driver fatigue is caused by a variety of circumstances. Excessive drowsiness has been linked in multiple studies to an increased risk of car accidents. Excessive work hours [4,5], unrealistic delivery timelines [6], a lack of exercise, a high prevalence of obesity [7], and sleep apnea-related issues [8–10] are documented reasons for driving when fatigued.

Low back pain affects drivers. Compared to the general population, commercial drivers have back discomfort 2 to 4 times more frequently [11]. Long periods spent sitting still, awkward posture, exposure to whole-body vibration, lifting and carrying required for material handling [12], and an unpleasant or poorly fitted seat position [13] are all potential causes of this back pain. The root cause of low back discomfort in truck drivers has been thoroughly investigated [14–16]. A pertinent 1987 study examined the moods and levels of weariness in people with episodic low back pain. They discovered that weariness followed the start of pain by around 24 hours whereas mood states did not predict the onset of pain. So low back discomfort was a predictor of weariness, per their research [17].

Materials and Method

The answers of 91 commercial drivers were compiled in this cross-sectional survey. Volunteers who were waiting for their DOT physical examination or at their place of employment were used as subjects.

Drivers were asked if they would be willing to participate as they signed in at the front desk. They answered 50 questions in a survey that included questions about their demographics, the Oswestry Disability Index (ODI), the Brief Fatigue Inventory, and information about the kind, length, and frequency of their driving activities (BFI).

Each participant was given a consent document as part of the survey collection procedure, and then had the chance to respond to the questions that were posed to them. The survey was completed, placed in an envelope with an attachment, sealed, and placed in a box at the front desk. Therefore, the survey was anonymous. At the end of each week, the lead researcher gathered the questionnaires. The university gave its approval to this study.

Statistical Analysis: Multiple linear regressions were used to examine potential sources of exhaustion (MLR). Age, driving distance, ethnicity, BMI, and degree of job satisfaction were all taken into account while adjusting the regression model. When $p<0.04$, a result was deemed statistically significant.

Results

The majority of the participants in this study were middle-aged (mean=42.9 years). Their average BMI was 32.9, which qualifies them as obese. (Table 1).

Table 1: Baseline of the cohort population

Variable	Mean ± SD (min-max)
Age	42.9 ± 11.5 (24-70)
BMI	32.9 ± 7.4 (21-53)
Height (inches)	67.3 ± 4.8 (52-75)
Weight	211.2 ± 45.2 (115-347)

Only five of these drivers, who made up the majority, expressed dissatisfaction with their jobs. The full linear regression model's findings are presented in Table 2.

Table 2: Linear regression model predicting fatigue

Variable	SE	B	p
Age	0.135	-0.085	0.530
BMI	0.190	0.050	0.794
Low Backpainscore	0.090	0.564	<0.001
Job satisfaction	3.46	-5.14	0.142
Miles/Week	0.001	0.001	0.370

The only significant predictor of Low Back Pain was LBP score (p=0.001). Results with a simplified model that incorporated driving experience, and LBP score were nearly identical.

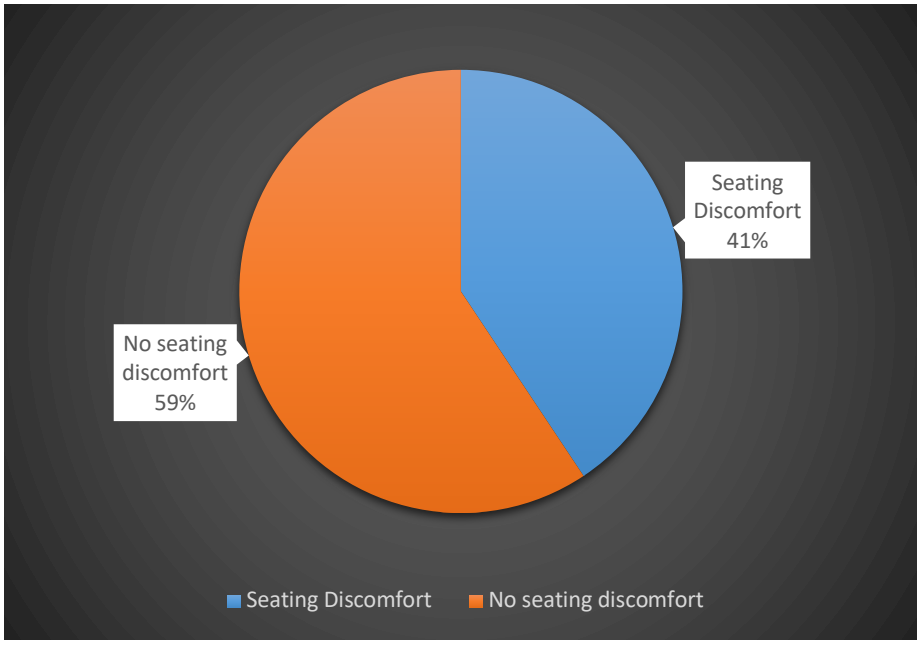

Figure 1: Discomfort due to improper design of seats

In case of occupational factors, out of 91 truck drivers, 37 drivers (41%) complained of facing seating discomfort while the other 54 interviewees (59%)did not complain regarding this.

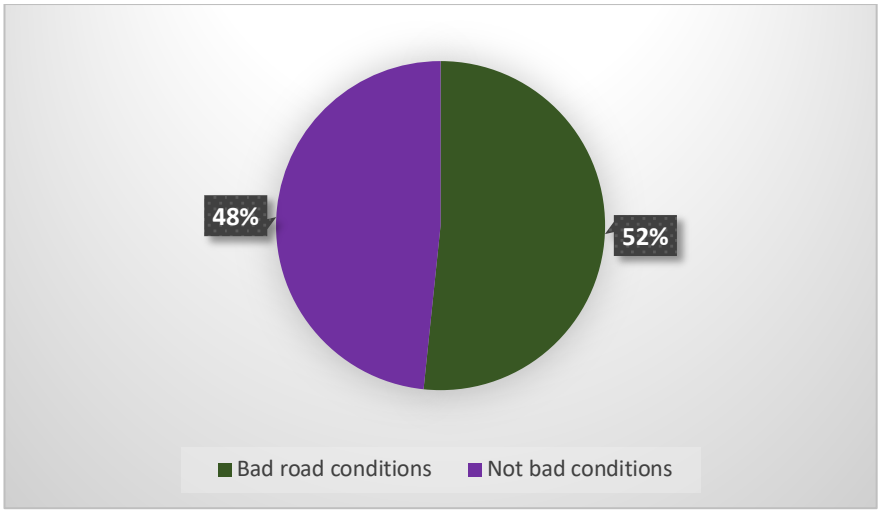

Figure 2: Perception regarding bad road conditions

Among the total interviewees, 47 drivers (52%) mentioned that the road conditions of their daily route were mostly bad. However, the other 44 drivers (48%) did not have negative perception regarding road conditions.

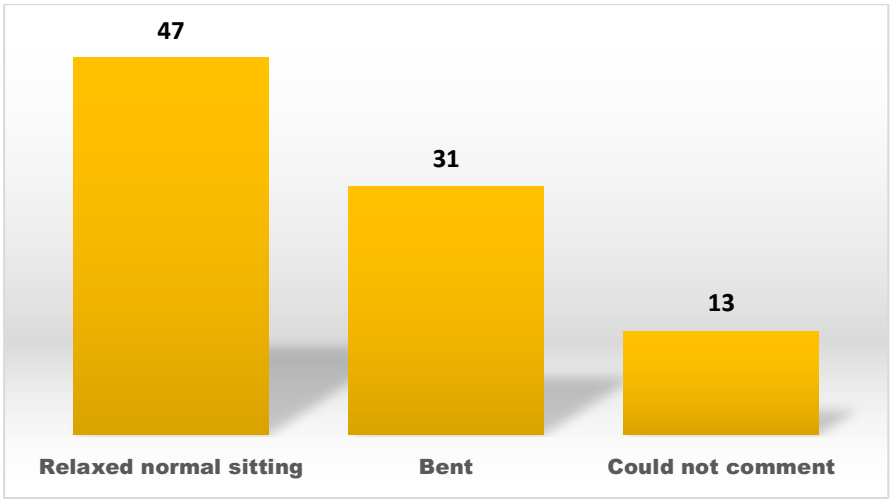

Figure 3: Postural dysfunction perception during driving

A total of 47 participants mentioned that they had a relaxed sitting posture while driving, however, 31 others admitted of a postural dysfunction during driving. 13 drivers did not provide any comment.

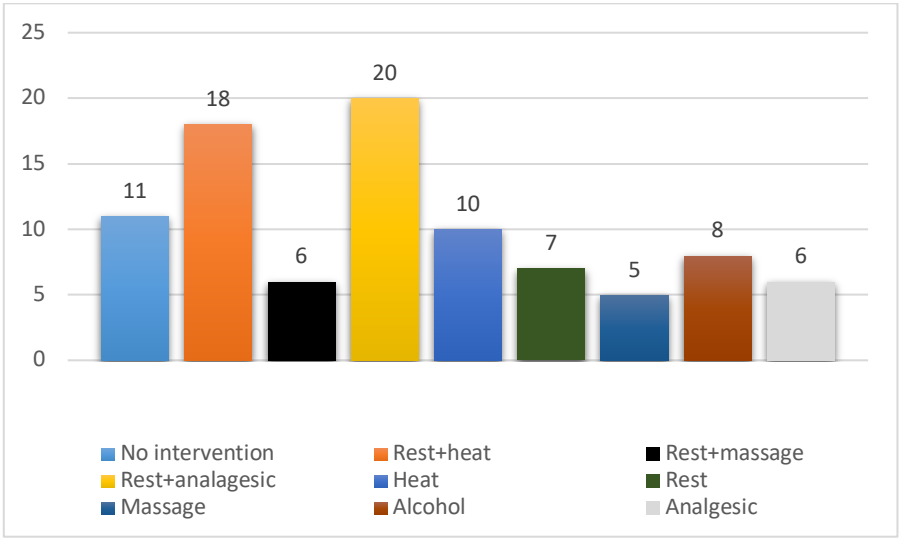

Figure 4: Therapeutic preferences

Out of 91 participants, 7 drivers (7.69%) preferred rest as a therapy, 5 drivers (5.49%) preferred only massage, 10 drivers (10.99%) preferred heat, 8 participants (8.79%) preferred alcohol while 6 participants (6.59%) preferred analgesic. As noted in the questionnaire, 6 drivers (6.59%) preferred rest and massage, 18 drivers (19.78%) preferred both rest and heat, while 20 drivers (21.98%) preferred both rest and analgesic. However, 11 drivers (12.09%) did not prefer any kind of therapies.

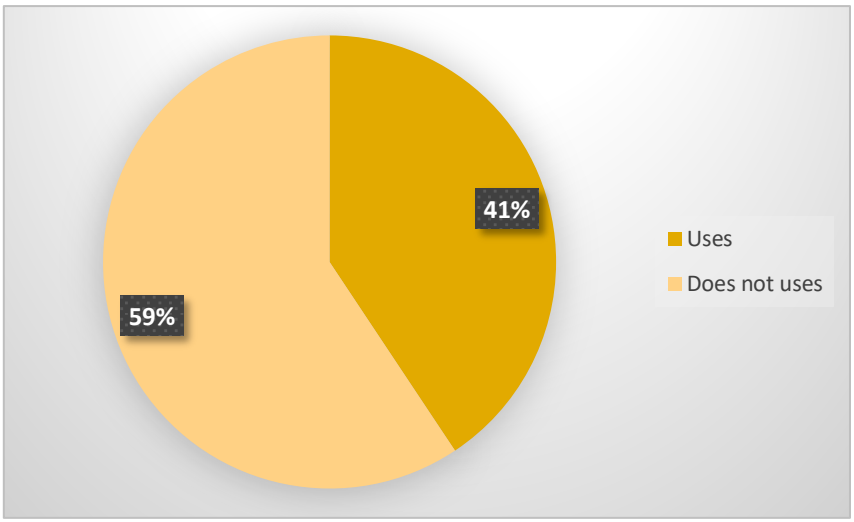

Figure 5. Usage of ergonomic aids

While 37 drivers did not use ergonomic aids, 54 drivers used ergonomic aids to cushion their lumbar spine during driving.

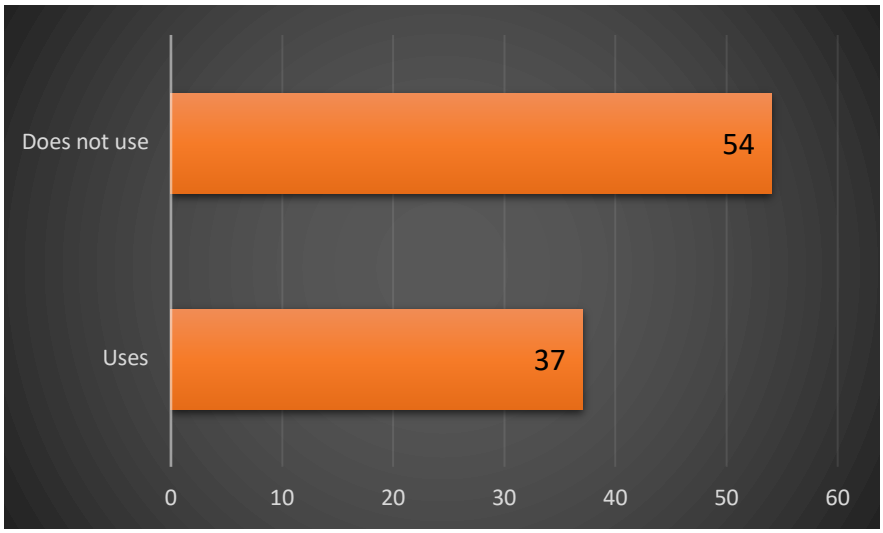

Figure 6. Footrest preference

54 drivers (59.34%) did not use any footrest while driving, however, the remaining 37 drivers (40.66%) did use footrest for support.

Discussion

According to the survey's findings, there is a significant correlation between the severity of back pain and the amount of exhaustion stated by the study's drivers ($p<0.0001$). It's noteworthy to note that the majority of participants had little to no back discomfort, and no drivers had pain that qualified as severe. Since none of our subjects were totally incapacitated or confined to beds, this is not surprising. In addition to reporting high levels of exhaustion, several drivers reported continuing to work despite having severe levels of back discomfort. This is particularly problematic given the established detrimental effects of driver tiredness**.**

The study's substantial shortcomings are acknowledged by the authors. Ninety subjects made up the comparatively modest number of participants. Since the participants were self-selected, there may have been a bias in favour of back-painful drivers. There may be valid concerns regarding the instruments' applicability because they haven't been used in this particular setting before to measure the degree of disability and the intensity of weariness.

Despite these drawbacks, the findings point to a strong connection between back discomfort and weariness that requires more investigation

Conclusion

A larger study, possibly with randomised participants and a prospective design, that might also include an objective measure of disability related to the spine in addition to the other research that these data propose. Characterizing the process or mechanisms causing the back discomfort might also use more research and make helpful suggestions for actions.

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