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A study to assess sleep quality among long-haul truck drivers passing through nh-8 of Udaipur city, Rajasthan

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Abstract
Background: Long-haul truck drivers play a pivotal role in the transportation industry, ensuring the efficient movement of goods across vast distances. Long-haul truck drivers face a myriad of challenges that can disrupt their sleep patterns. The irregular work schedules, extended hours of driving, and the need to meet demanding delivery deadlines often lead to sleep deprivation and poor sleep quality. This research seeks to delve into the sleep quality of long-haul truck drivers, exploring the various factors that contribute to their sleep disturbances and examine the potential consequences for their health and road safety.
Method: The method adopted for the present study was quantitative survey approach as the study aims to assess sleep quality of 384 long-haul truck drivers passing through NH-8 of Udaipur city, Rajasthan. This approach would help the investigator to evaluate the effect of sleep quality in long-haul truck drivers. Samples were drawn by using non-probability convenience sampling technique. Data was collected by using PSQI score.
Result: Findings shows that majority 53.9% shows that they had poor sleep quality so we can recommend in future more study should be done in various aspect of geographical areas also there should be an intervention to make so that they can improve sleep quality.
Interpretation and Conclusion: Based on the present study finding that the good sleep quality is very important and vital key component specifically to the long-haul truck drivers. A better sleep quality provides several impacts on their mental stress, level of consciousness, physical health as well as work productivity and effectiveness. A poor sleep quality can lead to several disadvantages in which the major one is road traffic accidents while driving, so a good sleep quality is important to avoid these consequences. Long haul truck driver uses to stay away from their home and they kept on driving to several places regardless their health status, inadequate sleep, mental status, geographical diversity. So we can conclude that a better sleep quality should be very beneficial not just for long haul truck drivers as well as every working person. Present study was to assess the sleep quality of long-haul truck drivers on N.H. 8 Udaipur.

Keywords: Effectiveness, present, assess

Introduction
This opening chapter introduces the study by exploring the background and historical perspective of the sleep quality among long-haul truck drivers and ways to improve sleep quality among long-haul truck drivers.
The trucking industry plays a critical role in the global economy, transporting goods across vast distances and ensuring the smooth functioning of supply chains. This industry is associated with a high risk of accidents, which have devasting consequences for drivers, other road users, and the environment. Here are some statistics on truck drivers' accidents in India: According to the Ministry of Road Transport and Highways, there were 4,37,396 road accidents in 2019, resulting in 1,54,732 deaths.
The National Crime Records Bureau (NCRB) reports that there were 4,78,600 road accidents in India in 2019.

One major factor that contributes to these accidents is poor sleep quality among truck drivers especially in long-haul truck drivers.

A study published in the Indian Journal of Occupational Health found that 36.7% of truck drivers in India reported daytime sleepiness, which can be a sign of poor sleep quality among long-haul truck drivers.

According to Indian Journal of Occupational and Environmental Medicine found that 59.7% of truck drivers reported poor sleep quality in survey. The aim of the study is to evaluate long-haul truck drivers, their rest locations and their association with sleep quality among long-haul truck drivers and ways to improve sleep quality among long-haul truck drivers. The present study seeks to address these gaps in the literature by assessing sleep quality among long-haul truck drivers and exploring ways to improve sleep quality among long-haul truck drivers.

By gathering data on sleep patterns, sleep related problems, and driver safety, we hope to gain a better understanding of the factors that contribute to poor sleep quality among long-haul truck drivers and identify potential interventions that can help drivers get the rest they need to stay safe on the roads..

Sleep quality is a multidimensional concept that contains quantitative aspects of sleep, such as sleep duration, sleep latency, as well as more purely subjective aspects, such as depth or restfulness of sleep.

Sleep quality may be assess using a Pittsburgh Sleep Quality Index (PSQI).

The aim of the study is to evaluate long-haul truck drivers, their rest locations and their association with sleep quality among long-haul truck drivers and ways to improve sleep quality among long-haul truck drivers.

Long hours of driving, irregular schedules and extended periods away from home can all disrupt sleep patterns and lead to fatigue, drowsiness and impaired driving performance. The present study seeks to address these gaps in the literature by assessing sleep quality among long-haul truck drivers and exploring ways to improve sleep quality among long-haul truck drivers.

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Need for the study

Despite the critical role that truck drivers play in the global economy, they face a range of challenges that can compromise their safety and well-being. One major issue is poor sleep quality, which can lead to fatigue, drowsiness and impaired driving performance, all of which increase the risk of accidents. While many studies have explored the factors that contribute to poor sleep quality among long-haul truck drivers. There is still much to be learned about the specific challenges faced by truck drivers and the most effective strategies for promoting healthy sleep habits. The present study seeks to address this gap in the literature by assessing sleep quality among long-haul truck drivers and exploring ways to improve sleep quality among long-haul truck drivers.

Research Elaboration

Problem Statement

"A study to assess the sleep quality among long-haul truck drivers passing through NH-8 of Udaipur city, Rajasthan"

Objectives of the study

- To assess sleep quality among long-haul truck drivers passing through NH-8 of Udaipur city, Rajasthan.
- To find out association between sleep quality index with socio-demographic variables.

Assumptions

- There may be less prevalence of sleep disturbance among long-haul truck drivers regarding sleep quality.
- There may be association between sleep quality index with socio-demographic variables.

Methods

Research design

Research design is the "binding force" that holds of the elements in a research together. It is overall plan for obtaining answer to the question being studied and for handling some of difficulty encountered during the Research process.

The term "Research design" refers to the plan or organization of a research study. Research design helps the researcher in selection of subject's, manipulation of descriptive variables, procedure of data collection and the type of statistical analysis to be used to interpret the data. For the present study researcher used survey method research design.

Research setting

It refers to the physical location and conditions where data collection place in study. The present study was conducted at:NH-8 (At petrol pump, Dhaba's, Highway corner shops, service centre etc).

Sampling technique

Samples are used in research when it is not feasible to study the whole population from which it is drawn. The process of sampling makes it possible to accept a generalization to the intended population based on careful observation of variables within a relatively small proportion of population. In the present study, non probability convenience sampling technique was taken to select long-haul truck drivers passing through NH-8 of Udaipur city, Rajasthan.

Sample Selection Criteria

The following criteria were used to select samples

Inclusion criteria

The study includes:

- Those who are willing to participate in study.
- Truck drivers those travel more than 400Km/day.
- Truck drivers those who stops at our setting.

2. Exclusion criteria

- Truck drivers who are not able to understand Hindi and local language.
- Truck drivers who are not interested to take part in study.

Data collection tool

Section A: Socio demographic variables such as age, marital status, education level, accident in past 5 years, transporting shift, types of shift and work, job satisfaction, years of driving, life style using, hours of work per day.

Section B: PSQI scale was selected based on the objective of the study as it was considered the best and appropriated instrument to elicit a response from the literate responded.
The main strength behind the tool was:

- Related reviews of literature.
- Based on the opinions and suggestions of experts.
- Discussion with colleagues, books, journals and internet.

Scoring criteria

According to PSQI the scores ranged from a minimum of 0 to maximum of 21.

Table 1: Interpretation of Sleep Quality Index

PSQI Index	Sleep Quality
0-5	Good sleep quality
6-21	Poor sleep quality

Validity and Reliability

The PSQI has internal consistency and a reliability coefficient (Cronbach's alpha) of 0.83 for its seven components. Numerous studies using PSQI in a variety of older adult population internationally have supported high validity and reliability.

Data collection procedure

Data collection is a systematic gathering of information (data) relevant to the research purpose. Formal permission was taken from authorities.
Main study was done from 11 August to 17 august 2023 by using the non-probability convenience sampling method. 384 samples are selected for the study. The purpose of the study was explained to the respondents and confidentiality of their response was assured. A written informed consent was taken from truck drivers. After obtaining the permission and consent, conduct the main study and assess the sleep quality among long-haul truck drivers was administered to the respondents on the main study assessment was done.

Data analysis plan

Data analysis is the technique used to reduce, organize and give meaning to the data. In the present study, data obtain was analyzed on the basis of the objectives of the study using descriptive and inferential statistics.
A master data sheet was prepared with responses given by respondents.
The plan for data analysis are as follows:-

- Distribution of samples according to selected socio-demographic variables was analyzed using frequency and percentage distribution.
- Mean, mean% and standard deviation was used to analyses the data.
- Association was calculated by using Chi-square to find out the association between socio demographic variables with knowledge scores.

Results

Table 2: Socio demographic variables (N=384)

Sr	Variables	N	%
1.	**Age**		
	19 - 29 years	86	22.4
	30 - 39 years	147	38.3
	40 - 49 years	106	27.6
	Above 50 years	45	11.7
2.	**Marital status**		
	Single	32	8.3
	Married	352	91.7
	Widower	0	0
	Separated / Divorced	0	0
3.	**Education Qualification**		
	Non Formal Education	65	16.9
	Primary Education	195	50.8
	Secondary Education	93	24.2
	Sr.Sec. Education or Above	31	8.1
4.	**Accident in past 5 years**		
	Yes	21	5.5
	No	363	94.5
5.	**Transporting Shift**		
	Morning	119	31.0
	Evening	154	40.1
	Night	111	28.9
6.	**Types of shift & work**		
	Fixed	204	53.1
	Rotating	180	46.9
7.	**Job Satisfaction**		
	Not Satisfied	15	3.9
	Partially Satisfied	211	54.9
	Fully Satisfied	158	41.1
8.	**Years of Driving**		
	0-7 years	63	16.4
	8-15 years	148	38.5
	16-23 years	110	28.6
	Above 23 years	63	16.4
9.	**Use of any substance**		
	All types	121	31.5
	Tobacco	200	52.1
	Alcohol	43	11.2
	No substance	20	5.2
10.	**Hours of work / day**		
	8-10 hours	101	26.3
	11-13 hours	155	40.4
	14-16 hours	71	18.5
	Above 16 hours	57	14.8

Findings related to Socio demographic variables of the respondents revealed that

- **Age in years:** majority of the respondents 38.3% (147) belongs to 30 - 39 years.
- **Marital status:** majority of respondents 91.7% (352) belongs to Married.
- **Educational Qualification:** majority of respondents 50.8% (195) belongs to Primary education.
- **Accident in past 5 years:** majority of respondents 94.5% (363) belongs to No.
- **Transporting shift:** majority of respondents 40.1% (154) belongs to Evening shift.
- **Type of shift and work:** majority of respondents 53.1% (204) belongs to Fixed.

- **Job satisfaction:** majority of respondents 54.9% (211) belongs to Partially Satisfied
- **Years of driving:** majority of respondents 38.5% (148) belongs to 8 - 15 years.
- **Use of any substance:** majority of respondents 52.1% (200) belongs to Tobacco.

Hours of work/ day: majority of respondents 40.4% (155) belongs to 11 - 13 hours.

The level of Good Sleep Quality is 46.1% and Poor Sleep Quality is 53.9%. The findings show that the PSQI scale scores mean percentage is 5.83, median is 6.00 and standard deviation is 2.18.

Table 3: Interpretation of Sleep Quality among Long-Haul Truck Drivers

Sr. No.	PSQI Score	Sleep Quality	Frequency	Percentage
1	0-5	Good Sleep Quality	177	46.1
2	6-21	Poor Sleep Quality	207	53.9
	Total		384	100

Table 3: Revealed Mean, Median and SD of the respondents (N=384)

Sr. No.	Mean	Median	Sd
1	5.83	6.00	2.18

Table 4: Association between sleep quality score of respondents with socio- demographic variables

Socio demographic Variable		Sleep Quality		Total	Chi-square Value	df	p-value	Remark
		Below Median (<6)	Above Median (>6)					
Age in Years	19-29 Years	40	46	86	11.24	3	0.010	S
	30-39 Years	89	58	147				
	40-49 years	66	40	106				
	>50 Years	34	11	45				
	Total	229	155	384				
Marital Status	Single	14	18	32	3.66	1	0.056	NS
	Married	215	137	352				
	Widower	0	0	0				
	Separated/ Divorce	0	0	0				
	Total	229	155	384				
Educational Qualification	Non formal education	51	14	65	19.50	3	0.0001	S
	Primary education	120	75	195				
	Secondary education	46	47	93				
	Senior secondary and above	12	19	31				
	Total	229	155	384				
Accidents in past 5 years	Yes	10	11	21	1.33	1	0.248	NS
	No	219	144	363				
	Total	229	155	384				
Transporting Shift	Morning	66	53	119	1.25	2	0.53	NS
	Evening	95	59	154				
	Night	68	43	111				
	Total	229	155	384				
Type of shift and work	Fixed	115	89	204	1.92	1	0.165	NS
	Rotating	114	66	180				
	Total	229	155	384				
Job Satisfaction	Not satisfied	15	0	15	13.78	2	0.001	S
	Partially satisfied	114	97	211				
	Fully satisfied	100	58	158				
	Total	229	155	384				
Years of driving	0 - 7 years	21	42	63	23.615	3	0.000	S
	8 - 15 years	91	57	148				
	16 - 23 years	77	33	110				
	Above 23 years	40	23	63				
	Total	229	155	384				
Use of any substance	All type	78	43	121	14.475	3	0.002	S
	Tobacco	104	96	200				
	Alcohol	35	8	43				
	No substance	12	8	20				
	Total	229	155	384				
Hours of work per day	8 – 10 hours	48	53	101	12.460	3	0.006	S
	11 - 13 hours	97	58	155				
	14 - 16 hours	52	19	71				
	>16 hours	32	25	57				
	Total	229	155	384				

Conclusion

Based on the present study finding that the good sleep quality is very important and vital key component specifically to the long-haul truck drivers. A better sleep quality provides several impact on their mental stress, level of consciousness, physical health as well as work productivity and effectiveness. A poor sleep quality can lead to several disadvantages in which the major one is road traffic accidents while driving, so a good sleep quality is important to avoid these consequences. Long haul truck driver uses to stay away from their home and they kept on driving to several places regardless their health status, inadequate sleep, mental status, geographical diversity. So we can conclude that a better sleep quality should be very beneficial not just for long haul truck drivers as well as every working person. Present study was to assess the sleep quality of long-haul truck drivers on N.H. 8 Udaipur. Findings shows that majority53.9% shows that they had poor sleep quality so we can recommend in future more study should be done in various aspect of geographical areas also there should be an intervention to make so that they can improve sleep quality.

- **Availability of Data and Materials**: All related data have been presented within the manuscript. The data set supporting the conclusion of this article is available from the corresponding author upon reasonable request.
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- **Ethical approval:** The study was approved by the Institutional Ethical committee.

Recommendations

On the basis of analysis and interpretation of data, the following recommendations were made

- A similar study may be undertaken with large sample to have a better generalization.
- Study can be conducted by true experimental research design.
- Study can be conducted with the same research design and approach in different geographical area.
- Management of health facilities can introduce flexible payment schemes for long-haul truck drivers at the grassroots so that vulnerable populations can be benefited from quality health care.

Conflict of interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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