

The Study of Factors Causing Fatigue Among Truck Drivers from Lanja And Sangmeshwar Tahsils (Ratnagiri Districts) Of Maharashtra, India.

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Abstract : This study has been undertaken to investigate the determinants of fatigue among truck drivers from two administrative blocks of Maharashtra, India. Fatigue causing determinants among truck drivers were identified through research literature available. The first hand data collected through structured questionnaire and analyzed and compared. Continuous driving, more than legally prescribed time of driving within a day, no weekly off from the duty, non-scheduled working hours are the major issues which relate to feeling fatigued among the truck drivers from Lanja and Sangmeshwar tehsils of Ratnagiri districts of Maharashtra.

IndexTerms – fatigue, truckdrivers.

I. INTRODUCTION

The role of driver fatigue in driving safety is a complex one. Within commercial road transport, the core issue is one of working time and the opportunity, this offers for rest and recuperation from work, together with the possibility of presenting for work unimpaired by fatigue and loss of sleep (European Transport Safety Council, 2001). The work in shifts, associated with the reduction in sleep hours, is also a very frequent complicating factor among truck drivers. The use of alcohol and other drugs stands out in some studies as a predictive factor of Excessive Daytime Sleepiness (EDS) and road accidents (José Carlos Souza, Teresa Paiva, Rubens Reimão ,2005) . According to Indian Government statistics, in 2016 there were 60986 road accidents in India involved trucks/lorries. Apart from those 4547 were in Maharashtra only (third in row) (<https://data.gov.in/node/4071961/download>). Stoohs et al. evaluated 90 commercial long-haul truck drivers 20 to 64 years of age, and found that EDS was one of the factors of greatest risk for road accidents. EDS, reduced number of sleep hours, shift work, excessive driving time, use of alcohol and other drugs are predictive factors of automotive accidents (José Carlos Souza, et.al.2005). The causing factors of feeling sleepy among truck drivers from Sangmeshwar and Lanja blocks are very less studied. The present study tries to determine the factors responsible for fatigue among truck drivers from Lanja and Sangmeshwar tahsils (Ratnagiri districts) of Maharashtra India.

II. METHODS AND MATERIALS

As truck driving is a nomadic profession, present study used accidental sampling for data collection where respondents were identified on the basis of family residing location as Lanja and Sangmeshwar tahsils i.e. administrative blocks. Hundred respondents filled up structured questionnaire i.e. 50 from each tehsils. Among the respondents 66 per cent respondents were from the age group of 30-50, 91 per cent were married persons, 38 per cent had small family(3 or less members) and again 38 per cent had a medium family (4 to 6 members), 26 per cent had education up to primary and 71 per cent had up to secondary and higher secondary, 83 per cent were following Hinduism and 8 per cent were Muslims, 13 per cent were from schedule caste and 51 per cent were from other backward class, all the respondents were working as a driver and not owner.

Work pressure in the transport sector is often a result of 'just-in-time' management: goods have to be delivered at the point in the production process when the customer needs them

(European Agency for Safety and Health at Work (EU- OSHA), 2010). 56 per cent respondents in our study admitted that they have met an accident at least once. The fact was admitted by more respondents from Lanja tehsil (62per cent).

Respondents Encountered an Accident

Table No. 1

Met an accident	Sangmeshwar	Lanja	Total
Yes	24 (48per cent)	32(62per cent)	56
No	26(52per cent)	18(36 per cent)	44
Total	50(100per cent)	50(100per cent)	100

Reasons behind accident

Table No. 2

Reason	Sangmeshwar	Lanja	Total
Over work & feeling exhausted	05	13	18(32.14per cent)
Drinking habit	05	03	08(14.28per cent)
Sleepiness	06	07	13(23.21per cent)
Vehicle & other problem	08	09	17(30.35per cent)
Total	24	32	56(100per cent)

Among 56 respondents (who admitted that they have met an accident) 32.14 per cent have given the reason of their accident as they were feeling exhausted at the time of incidence and it was due to overwork. 23.21 per cent respondents resorted the sleepiness as the reason behind their accident. 14.28 per cent respondents admitted that they had drunk during the accident and that might be the reason. According to 30.35 per cent respondents the reason of their accidents was the situation out of their control i.e. vehicle or other problem.

Driving Without Halt (Continuous Driving)

Table No. 3

Continuous Driving for...	Sangmeshwar	Lanja	Total
8 & less Hours	21	18	39
8 to 10 Hours	26	29	55
8 to 15 Hours	02	01	03
More than 15 Hours	--	01	01
No limit/ As per requirement	01	01	02
Total	50	50	100

55per cent respondents say that they are driving their truck without a halt for 8 to 10 hours. Table no 3.11 bring the reality that truck drivers in the study area have cited 'overwork and feeling exhausted' as a most possible reason of the accidents they met. The above table supports their perception.

DRIVING WITHIN A DAY (24 HOURS)

Table No. 4

Continuous Driving for...	Sangmeshwar	Lanja	Total
8 & less Hours	03	04	07
8 to 10 Hours	19	21	40
10 to 15 Hours	17	20	37
More than 15 Hours	07	04	11
No limit/ As per requirement	04	01	05
Total	50	50	100

88per cent respondents are saying that they are driving for more than 8 hours in a day. It is a violation of standard norms worldwide and again an invitation to accidents and personal physical problems like backache, insomnia etc. 48 per cent truck drivers in the sample are driving for more than 10 hours in a day.

WEEKLY OFF FROM THE DRIVING

Table No. 5

Weekly Off	Sangmeshwar	Lanja	Total
Yes	17	12	29
No	33	38	71
Total	50	50	100

Working long daily and weekly hours on a continuing basis is associated with chronic fatigue, a high risk of crashes, and a number of serious chronic health conditions in drivers. It is estimated that safety regulations will save 19 lives and prevent approximately 1,400 crashes and 560 injuries each year in America. (<https://www.fmcsa.dot.gov/newsroom/new-hours-service-safety-regulations-reduce-truck-driver-fatigue-begin-today>). 71per cent respondents of our study don't get weekly off from their duty. They have to drive continuously. They get the off from driving either when they are in any health problem, or when there is an off season.

Working Style

Table No. 6

Working Timings	Sangmeshwar	Lanja	Total
Fixed Schedule	7	11	18
Non Scheduled timing	43	39	82
Total	50	50	100

According to a study done by All India Transport Welfare Association (AITWA), an industry body of transporters, an estimated 26,650 people died (out of a total of 139,091 deaths) as a result of drowsy driving in 2012. In 2013, this figure was 24,081 (out of a total of 137,423). (http://www.huffingtonpost.in/2016/04/05/truck-drivers-sleep-india_n_9615816.html). In our study 82per cent respondents said that their working is not scheduled. There have no fixed timings in their profession. As a result they are on their job in drowsy conditions. Table no. 1 gives the figure 56 per cent the respondents who have admitted their involvement in accident.

III. DISCUSSION

A study undertaken by Federal Motor Carrier Safety Administration, 'The Large Truck Causation Study (2007)' reported drug use (26per cent of the crashes they studied), Speeding (23per cent of accidents they studied), driver not familiar with the roads(22per cent of the accidents involved), over-the-counter medications(18per cent of the crashes), failure to check blind spots (14per cent of the accidents), driver fatigue (13per cent of the accidents) are the major causes of truck accidents. In our study overwork /feeling exhausted (32.14per cent) and Sleepiness (23.21per cent) are the two major concerns for accidents according to the respondents who were actually involved in the accidents. This fact proposed for further investigation.

When drivers are well rested and when they take enough breaks during driving, they can drive for a long time without performance decrement. Most professional drivers and shift workers have to cope with fatigued driving on a frequent basis due to work-related factors (SafetyNet 2009). A study by Sando, T., Angel etl. (2010, as cited in Testimony of Henry Jasny 2011) concludes that on average, drivers who were involved in preventable collisions drove over six hours more per week than that of the general population of drivers. Preventable collisions are more prevalent as the length of the driving period increases. In our study we found 55per cent sample drives continuously between 8 to 10 hours which leads them to fatigue. There is no major difference in continuous driving hours in both the tehsils. As per the Indian Factories Act 1948, every adult cannot work for more than 48 hours in a week and not more than 9 hours in a day. According to Section 51 of the Act, the spread over should not exceed 10-12 hours. 53per cent respondents in our study say that they have to work more than 10 hours in a day which lead them towards fatigue.

After the accumulation of fatigue, the operator needs enough off duty period to recover from critical fatigue condition. To start with a green fatigue condition (full recovery) in a weekly schedule the operator needs at least two days off duty (Sando, T., Mtoi, E., Moses, 2010). Drivers operating on an 8-day schedule can drive an extra 18 hours in 8 days for a total of up to 88 driving hours instead of the legal limit of 70-hours. These hours of working and driving, week after week, month after month, are dangerous and deadly compared to the typical 40 hour work week of most Americans (Testimony of Henry Jasny 2011). Weekly off from the duties is essential to keep healthy and wakeful for the drivers. In our study 71 per cent respondents are saying that they don't get weekly off from their duties. They must be available for 24*7 for the job. But it indicates risk they are running on the road.

82per cent respondents in our study say that they don't have scheduled working hours. They need to be on the wheel whenever required. These unscheduled working hours bring disturbances in their family and personal life.

IV. CONCLUSION

Continuous driving, more than legally prescribed time of driving within a day, no weekly off from the duty, non-scheduled working hours are the major issues which relate to feeling fatigued among the truck drivers from Lanja and Sangmeshwar tehsils of Ratnagiri districts of Maharashtra. Fatigue and sleepiness are the two major reasons behind the accidents among these segment of the society according to the respondents of this study. The use of accidental sampling and small geographical study area are the two major limitations of this study. But this study invites attention of further investigation in this area.

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