

Causes of Truck and Cargo Drivers' Fatigue in Bangladesh

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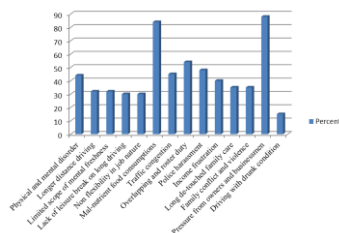
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Graphical abstract



Abstract

In recent studies, it has been observed that fatigue is one of the major factors contributing to fatal accidents in Bangladesh. It is increasing tremendously and alarmingly and causing the huge loss of lives and assets. In Bangladesh, heavy vehicle drivers are susceptible to frequent fatigue related accidents, thus increasing disability and social and economic vulnerability. The study aims to identify truck drivers' causes of fatigue and other physical, socio-psychological and economic consequences on the drivers. The study was conducted during January-June 2012 in the different truck and cargo terminals of Dhaka city in Bangladesh. A total of 400 drivers were chosen purposively. Qualitative data were collected through in-depth interviews and focused group discussion methods. The study indicates that the reasons behind fatigue led injuries were the driver's consistent working pressure, longer non-stop driving, traffic congestions, driving in drunk condition, inadequate facilities of physical and mental rests, family conflicts and long detachment from family care, owners and drivers ill relationship, harassments by police, job insecurity and income frustrations etc. The study showed that above 83% of the drivers directly or indirectly suffered from fatigue related problems. The study showed that pressure from owners and businessmen and lack of mal-nutrient food consumption were the leading causes of fatigue. The owners' and drivers' associations, civil society, Government of Bangladesh (GOB), NGOs and development partners should address the fatal crisis by adopting appropriate interventions to reduce the said fatigue related accidents.

Keywords: Fatigue; injury; disability; truck drivers; heavy vehicles

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1.0 INTRODUCTION

Drivers' fatigue is a serious problem resulting in thousands of road accidents each year. Research shows that driver fatigue may be a contributory factor in up to 20% of road accidents, and up to one quarter of fatal and serious accidents. These types of crashes are about 50% more likely to result in death or serious injury as they tend to have high speed impacts¹. Worldwide, each year 1.3 million peoples are killed and 50 million are injured by road accidents. More than 85 percent of these casualties occur in low and middle income countries. To relevant consequences and fatality situation, it was predicted that the number of people killing on roads would rise by at least 80 percent over the next 20 years especially in developing countries like Bangladesh². In Bangladesh, according to the official statistics (police statistics), at least 2437 accidents were reported in 2010 of which 1911 were directly fatigue related fatal accidents. It was also opined that the number could be bigger and ranging from 10-12000 fatalities in each year³. The database of the Accident Research Institute, Bangladesh (ARI) shows that the numbers of fatalities have been increasing and while it was reported 1009 in 1982 and got increased to 2443 in 2010⁴.

Study shows that 1 in 3 fatal articulated truck crashes involves fatigue⁵. Fatigue is four times more likely to contribute to workplace impairment than drug or alcohol⁶. The prevalence and

intensification of road accidents in Bangladesh is remarkably increasing against the international statistics, costing about 2% of the total GDP. Since in Bangladesh, heavy vehicle (truck and cargo) drivers are the major contributors to fatigue related road accidents causing fatalities and disabilities. It is assumed that the drivers' community, by and large, displays syndromes of trans-humans nomadism needed for vocational trips and out-haltages⁷.

The sub-culture of the drivers' community and traffic ill management system bears ingrained elements of professional heritage, socialization of disorganization stemming from illiteracy, poverty, sexual promiscuity, ill driving management, mal-nutrition, lack of leisure, over working pressure and over ruling and violation of the labor law, deviant behavior like habitual ill practices were leading to fatigue related road accidents in developing countries. It is mentionable that the human rights violation and inadequate implementation of ILO Social Safety Convention 1952 (SI-102) in Bangladesh through which the Government and Private sector stakeholders are directly liable to the fatigue related accidents. The objective of the study is to identify the causes of truck and cargo drivers' fatigue-while driving based on their own perceptions, and to recommend policy measures for effective reduction in fatigue related deaths and injuries in Bangladesh.

2.0 METHODOLOGY

The study was conducted during January-June 2012 in the different truck and cargo terminals of Dhaka city in Bangladesh. There were several rationales behind selecting respondents from different terminals of Dhaka city. Dhaka is the hub of road communication system of Bangladesh. Most of the drivers made their movement among various districts of Bangladesh through Dhaka city. Therefore, respondents were selected from Dhaka city to address the diversified experiences of drivers working in different region of Bangladesh. As the study was more focused on answering the question related to 'Why (cause)' and 'How (process)', a combination of qualitative and quantitative approaches was adopted in formulating research design. At this backdrop, Focus Group Discussion (FGD) and in-depth interview were held and used as research techniques. Data Collection Instruments/checklist were devised in consistent with research objectives and pretested prior to the data collection phase. Questionnaire surveys were conducted on 400 heavy vehicle truck and cargo (300 trucks and 100 cargos) drivers using pre-designed questionnaire, and samples were selected randomly for the questionnaire survey. Questionnaire design was developed incorporating the research objectives and on the basis of specific issues such as socio-economic and psychological background characteristics of fatigue and look into the behavioral aspects of the heavy vehicle drivers (trucks and cargos) which are related to the road accidents in Bangladesh. Most focus-group and in-depth interview participants were aged 30-55 years. All participants were male and drive at least 500 kilometer in a trip. Interviews were conducted in different terminals of Dhaka city in a comfortable environment and were tape-recorded with

participant's permission. Transcriptions were made based on the original tape-recordings. The completed transcription was compared with hand-written notes to fill in inaudible phases or gaps in the transcription. Data were organized using the NVivo software (version 8). One of the main advantages of applying the NVivo is its ability to ensure the process of coding so, the management of data becomes more visual and more flexible. Consent was taken from participants before conducting the study.

3.0 RESULTS

The fatigue related fatality is increasing tremendously and it has become an alarming event causing huge loss of lives and assets. The study revealed that about 83% drivers in Bangladesh were directly or indirectly involved in fatigue related disability and faced psycho-social disorders based on their own perceptions. The causes and factors underlying with fatigues were physical trauma, longer non-stop driving, psychometric disorder, limited scope of mental freshness and lack of leisure, long detached family care, non-flexibility, deteriorated food consumptions, entrails suffering led fatigues, owners ill management effects, police made harassment, low income related frustration, ill system of long driving (labor law violation). It also showed that drivers could not afford rest-break during long driving owing to impose high pressure from the owners, traffic-congestion and compelled to overlapping of roaster duties as mandatory which conflicts to obey the labor law convention and directly violated the human rights in this regard. The key findings of the study are tabulated in Table 1 and graphically shown in Figure 1 as shown below and discussed as follows:

Table 1 Causes of fatigue on truck and cargo drivers

Sl.	Causes of Fatigue	No.	Percent
1	Physical and mental disorder	146	44
2	Longer distance driving	106	32
3	Limited scope of mental freshness	105	32
4	Lack of leisure break on long driving	100	30
5	Non flexibility in job nature	100	30
6	Mal-nutrient food consumptions	279	84
7	Traffic congestion	149	45
8	Overlapping and roster duty	179	54
9	Police harassment	159	48
10	Income frustration	133	40
11	Long de-touched family care	116	35
12	Family conflict and violence	116	35
13	Pressure from owners and businessmen	292	88
14	Driving with drunk condition	50	15

- Multiple responses were accepted

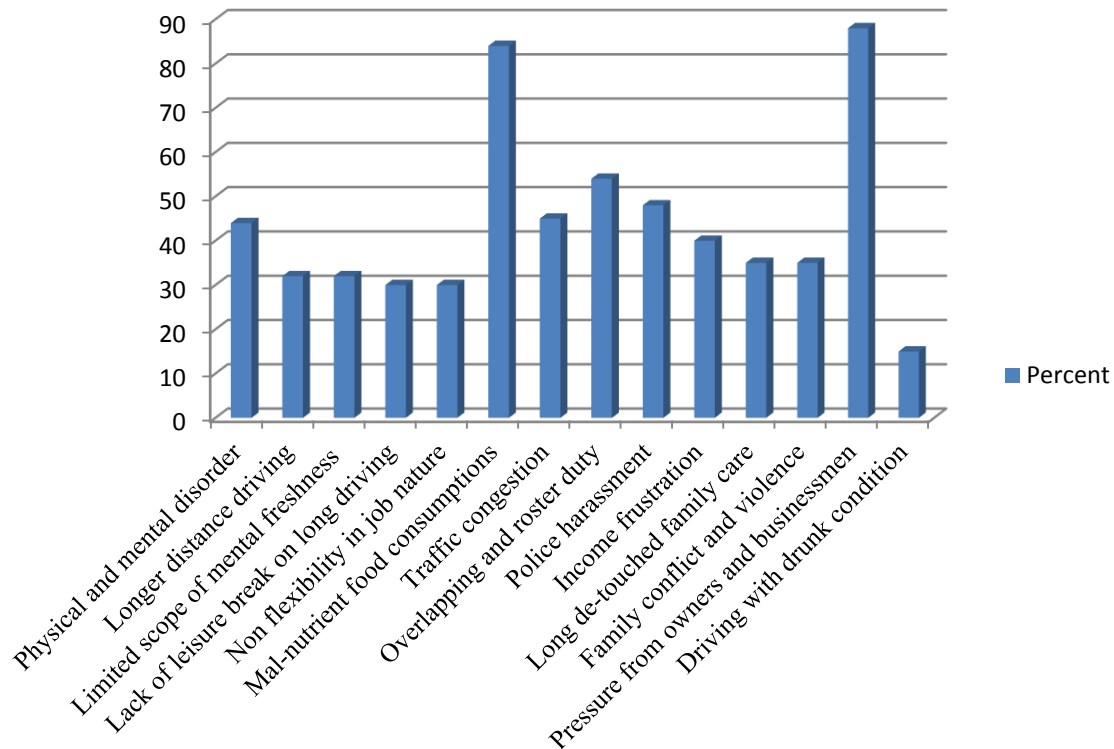


Figure 1 Causes of fatigue on truck and cargo drivers

3.1 Physical and Mental Disorder

The study showed that the heavy vehicle drivers faced the physical fitness difficulties for driving due to several reasons. These were ill physique, ill health, lack of mental soundness, body unfitness and other fitness to maintain order of functions and performance. The study found that forty four percent (44%) drivers suffered from physical and mental disorders during driving. In most of the cases, heavy vehicles drivers had suffered from restlessness and problem of long hour duties which caused poor function to perform assigned works and failure to do jobs efficiently. The attention focused on consideration of the age factors and wider variation of age (majority reflects above 45 age) was also dominant to render unfitness to quality for driving. The unique observation was that the old aged drivers had faced severe fatigue led weaknesses which made them vulnerable to shaken physical disorder. The both physical unfitness and mental sickness jointly affect the driver's condition that renders to increase fatigue's vulnerability.

3.2 Long De-touched Family Care and Affection

Gaps were found between family members and the drivers when the drivers were compelled to drive long to earn more money and more benefits instead of accompanying their families as essential. This habit and mental anxiety make them whimsical and frustrated; it creates distance and diversion from affection and love towards their families, kith and kin. Consequently, it pushed them out to make periodic external enjoyment with the vulnerable sex workers which increased affinity and dependency to avoid families and kith reception. Such vulnerable and non-cohesive attitudes create the disturbances to keep the drivers' minds fresh and lively. The lack of affection and ill nursing create a major disorder for them. In fact, this trust-gap and conflicting attitudes among the drivers' wives

and other family members put them under frustration, passiveness that result fatigue related vulnerabilities and risks. The study found that thirty five percent (35%) drivers suffered from this problem.

3.3 Pressured from Owners and Businessmen

The study showed that the consistent physical and mental pressure upon drivers from the owners and the businessmen creates sufferings (both angle hammering) throughout the long trips. The tendency was found increasingly terrible as owners and the businessmen demanded to receive extended services from the drivers. The owners and transport agencies were tempted to receive more benefits instead of considering the health and mental happiness of drivers. The owners and the clients were found to pay poorly to the drivers; also they mistreat the drivers and seek for extra services from the drivers. Consequently, this creates dissatisfaction and conflict between both parties. The study found that eighty eight percent (88%) drivers suffered from pressure from owner and businessmen.

3.4 Traffic Congestions and Narrowness

The poor physical infrastructure is one of the problems that cause the drivers' fatigues. The respondents opined that the narrowness of roads and highways where overcrowded vehicles create severe traffic-jam causes suffering. Considering the poorly managed road and the traffic system, the volume of traffic is terribly higher than the actual number should be. The restriction of vehicles movement in and out of the city and town makes the trip delayed and sometimes lengthy and this scenario results in fatigue among the drivers. The drivers had to wait long times and it caused delay on way to starting or leaving out of the city. To drive long and distant coverage, it takes unpredictable duration. Sometimes these forms

of delay consume the strength and vigilance of the drivers before exiting the city, which consequently deepen the fatigues.

The one way feeder channel delayed to reaching the landing spot or destination which drivers were failed to make up the schedule thus making them mentally sick and exhausted to cover up the delay. The snail coach driving also caused traffic load and an additional pressure over the normal traffic system (due to bad signaling or manual traffic signal) caused heavy traffic jam. The malfunctioned and unacceptable traffic system created huge delay. This traffic jam and delayed city driving made the drivers more tired and vigor less. The study found that forty five percent (45%) drivers suffered from this problem.

3.5 Police Harassment

The police harassment was a daily suffering scenario of the truck and lorry drivers. Ill practices and unfair behavior (bad treatment) of polices in the name of fitness checking causes the dissatisfaction of the truck drivers. The practice was highly under criticism. The city entry restrictions for trucks are also troublesome to the truck drivers. The unjustified inquiries, illegal issues or in accurate charges filed against the drivers were issues raised by the drivers. Moreover, tendencies to drive hurriedly and fast driving attitude to catch the next trip, pressure of owners and clients result in mental anxieties of drivers. Forty eight percent (48%) drivers suffered from this problem.

The drivers were also faced with the musclemen subscription charges or illegal tolls which were major issues. The truck and lorry drivers were given low priority in day time driving and given high priority for night time driving. The restriction of day time driving inside the city area (600 to 2200 hrs) was a constraint and the drivers had to wait long hours to pass the city, due to lack of planned by pass roads.

3.6 Income Frustration

The insecurity of service or the temporary working system is a matter of frustration and pain to the drivers. The poorly paid salary compared to hard labor delivery was a common practice. It was found that often the drivers were unable to meet the basic needs of the family and this crisis leads them to even adopt unfair means.

The deduction of income for even unintentional damages of resources and unwanted subscription by the miscreants and the police personnel was believed to be a major problem. The trip basis payment (monthly payment/fixed term salary) of drivers was also a vital factor that was found to cause mental anxiety about income insecurity which caused frustration and fatigue during driving. The dissatisfaction about the salary and benefits was a noted problem and one of the main causes of frustrations among truck and cargo drivers. The study revealed that thirty two percent (32%) drivers believed that they suffered from this problem.

3.7 Longer Distance Driving

The long distance driving culture creates abnormality in the drivers' life style; especially it creates the relationship gap, deprivation of kith-care, and facing health hazards. The drivers face unavoidable circumstances where they have to spend long days out of home. Many of the drivers sleep inside the vehicle because of unavailability of rest houses and rent of the guest houses that the drivers cannot afford to pay. The study found that forty percent (40%) drivers suffered from the problem of longer distance driving.

3.8 Limited Scope of Mental Freshness

The significance observation was that the drivers were being paid poor wages with which they were unable to make their lives solvent and happy. The tendency reflected that the drivers have to run after money to meet up the basic needs. The dissatisfaction and disharmony of lives make them frustrated, greedy and looking scope to legal and illegal money harvesting from the right or wrong sources.

The drivers are neglected as the lower social class of the community; hence, many of them do not feel comfortable to introduce or expose themselves among the mass peoples. The insecure job conditions, inflexible Terms of References and over dependency on truck owners, made them more vulnerable to shaken fatigue. Thirty two percent (32%) drivers suffered from this problem of lack of mental freshness.

3.9 Lack of Leisure Break on Long Drive

The general phenomena were that the drivers have to agree to the selected duty hours by the owners which are governed by the need of the supplier companies. Hence, these working pressures hamper the drivers' normal duty hours. As a result, the drivers do not get leisure break. They have no planned break or even rest, as because of the working roster. Although the drivers are put on continuous pressure in the name of providing additional incentives or by showing juicy carrots towards early to reach and early to return.

The leisure hours, if available, even not practically enjoyed or spent, as on the busy way to destination there is no guarantee because of road traffic accidents, congestions and crowded driving environment. The road does not permit to drive according to own plan of a driver, most of the time the journey is delayed, disturbed and the drivers cannot have access to the planned leisure. Thirty percent (30%) drivers believed that they suffered from this problem.

3.10 Overlapping of Roster Duty

The availability of skilled and efficient heavy vehicle drivers is a burning issue for the transport sector in Bangladesh. Lack of quality staff (transport traders) or the shortage of quality trusted drivers is a continuously growing crisis. The double roster duty intensifies the fatigue. The tendency is to meet the client's or company's interest and resulting towards the owners' profit. However, the drivers are susceptible to fatigue while driving. The study found that forty four percent (44%) drivers suffered from fatigues caused by overlapping of roster duty.

3.11 Driving with Drunk Conditions

What it was found sometimes that the drivers expressed or demonstrated nonprofessional attitudes during driving of unpredictable risks and high sensitive duty operation. The drivers did illegal attempts which generally not a common acceptance of the professional drivers. They used to driving as drunker or immediate after drinking that had high risks and prevalence to causing accident. In addition it stated that after drinking wine they used to go to mating or doing sex and sex related violence with the sexual workers. This mal practices grew them more mentally and physically disorders, shaken vulnerability of unfitnes of driving thence but they had to drive to reach in the destination without spacing leisure or rest. The non-preventive duties were compelled to create risks for other in the same streets driving.

The whole processes were rendered to increase the fatigue by over drinking wine, causing illness to drinking ill quality wine, massive actions of fermented wines and molasses drink, high and

hard alcohol intake. The law and order agencies sometimes tried to protect them but quantities were very few. The other medicating and caring medical support and volunteer aid organizations also did not interfere inclusively to reduce the matter in action affirmatively. It was recognized and an open secret issue to doing the matter as a part and parcel of their driving lives and non-prestigious matter. The study found that fifteen percent (15%) drivers had this habit.

3.12 Family Conflicts and Violence

The general observation of the study showed that the drivers' families had faced the family conflicts and unhappiness due to their professional and personal habits and job related realities and filthy issues. One of the reasons behind these conflicts was physical distance between drivers and their family members. This physical distance led to intense psychological distance which incurred mistrust and doubt among the family members. It was exhibited due to the failure of driver in carrying out family responsibility, keeping social bondages and meeting biological demand. This scenario made the respective driver more prone to commit violence against the family members. The fragility of relationship and affection gap with families had thrown them to have extramarital relationship. The study found that thirty five percent (35%) drivers suffered from this sort of problems.

3.13 Mal-Nutrient Food Consumption

The heavy vehicle drivers have bitter experiences of having low quality food- a health hazard that they cannot avoid or cannot find any alternative. The main reason was the low income and high demand of family cost. The drivers try to reduce the daily expenses. The mal-nutrient and low calorie food also contains contagious germs. Most of the drivers stop their vehicles close to the road and open restaurant or poorly made temporary sheds.

The sufferings from food poisoning make the drivers weak and fatigued. The overeating also causes high cholesterol syndrome suffering, palpitations and obesity led fatigues. In addition, they face crisis of pure and safe drinking water. The inadequate facility for balanced meal render to fatigue commonly. The study revealed that mal-nutrient food consumption is one of the major problems and eighty four percent (84%) drivers considered this to create a problem while driving.

3.14 Non Flexibility Job Nature

The job nature of the drivers is non-flexible. The profession is unlike other professions where the drivers enjoy at least some freedom. The strict rule in the industry is to obey the schedule and it is based on gross payment depending on the number of trips and distance of travel. The hardness and binding of job make them nonsocial and mechanical. Dissatisfaction and unhappiness make the behavior of the drivers rough and tough. The current practice of the terms of references for a heavy vehicle driver is totally against the international code of practices. The study revealed that thirty two percent (32%) drivers believed that this was a problem.

4.0 DISCUSSIONS

The study reflects that several factors have direct or indirect relationship with the fatigue of the heavy vehicle drivers in Bangladesh. The study indicated that no single issue or factor is independent or free from other causal effects. The drivers fatigue is not an isolated matter. It has multiple effects on driving and on the overall transport system. The fatigue causes physical unfitness to

drive safely, as it is related to sleepiness, tiredness, dozing and losing the strength of driving consciously. Fatigue is undoubtedly dangerous, stressing on health and causing unfavorable behaviors.

The study revealed that drivers become exhausted physically and mentally due to the endless longer driving duties. Both positive and negative deviant behaviors were found in the driver's personal life leading. Many of the driver respondents felt home sickness as well as opposite scenario (de-touched to attend frequent home visit). Almost many of them were deprived from family care and affection. The lorry drivers especially have bitter experiences facing the police harassment that often make them both physically and mentally upset.

5.0 CONCLUSIONS & RECOMMENDATIONS

Fatigue is not an isolated issue and caused due to many reasons. It is a complex and integrated issue that largely affects the drivers' life and driving behavior. Fatigue widely disturbs the drivers' mind and makes the drivers' activities slow and disordered. The overall consequence of fatigue is highly fatal not only for the drivers but for the owners, clients and to the society as a whole. The study recommends further prioritization of the fatigue issues. The following recommendations are made to reduce the fatigue related accidents:

- The income incremental policy and salary structure provision need to be negotiated with the concerned actors (stake holders).
- The quality and nutritious food consumption provisions on the way should be made.
- The long distance driving is a bigger and vital cause of fatigue which could be avoided through deployment or making provision for two drivers on the same duty. The physical disorder is a vital matter to be addressed through providing health care and proper take care through physiological nursing and balanced food consumption.
- The planned, welfare based recreation including the mental health training and service provision from owners and clients are necessary.
- The health care shop or center in the long way or distant traveling is required.
- The job contracts must be well defined.
- Police harassment must be controlled and eliminated and the appropriate measure needs to be taken to relief harassment.
- The long driving system /distance driving approach should be well designed. Overlapping and double duties must be stopped and driver should be checked before allowing for double duties.
- The long driving should have designed rest break, and recreation to insure mental health freshness.
- The drinking and drunk drivers must be eliminated through awareness and enforcements.
- Family conflict should be reduced through supplementary incentives, revision of policies and multispectral involvement.
- Development of public awareness campaign programs is a necessity in a country like Bangladesh.

Finally, the owners and drivers associations, civil society, government, NGOs and development partners should address the problem through appropriate integrated preventive measures in Bangladesh.

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