



# **THE EFFECT OF FATIGUE ON DRIVING: A CASE STUDY IN CAPE COAST METROPOLIS**

**By**

**Dr. Ogunleye-Adetona, C. I. and Mr Essifil Felix**

**Geography and Regional Planning,**

**University of Cape Coast, Ghana.**

**Email: [adeogunleye2005@yahoo.com](mailto:adeogunleye2005@yahoo.com)**

## **INTRODUCTION**

Road Traffic Accidents (RTAs) are increasingly being recognized as a public health problem in countries worldwide. According to United Nations (2004), road accidents are a growing problem worldwide with around 1million deaths and 23million injuries per year and that 85% of these deaths occur in developing countries.

In Ghana, road accidents now rank among the top eight killers and could easily get to the top five if no serious effort is made to reduce the current rate of occurrence (Abane, 2004). This is because road accidents increased substantially from 8,000 in 1991 to over 12,000 in 2007(Abane 2004; National Roads Safety Commission, 2008).Within that period, fatalities per 100,000 persons also increased steadily, from

5.84 in 1997 to 8.92 in 2007. In the first quarter of 2009 alone, as many as 600 persons lost their lives on the road from 3,051 crashes involving some 4,000 vehicles. In 1995, Ghana ranked second to Mexico in terms of road fatalities worldwide. In 1997, it ranked second to Nigeria in West Africa (Drivers Vehicle License Authority, 2009).

Road accidents or crashes are attributed broadly to three main factors: environmental, technical or vehicle-related and human factors. It is largely believed that 80-90% of all road accidents throughout the world result from human factors (Abane, 1994, 1995, 2004). Not many studies however have been undertaken to identify fatigue as part of the human factors. Rather many of the studies are attributed over speeding, drunk driving, wrong overtaking, among others (Abane, 2004).

The concepts of "fatigue", "sleepiness" and "drowsiness" are often used interchangeably. Sleepiness is an aspect of fatigue which is perhaps easiest to define. Sleepiness can be defined as the neurobiological need to sleep (NCSCR/NHTSA Expert panel on driver fatigue and sleepiness (2001), resulting from physiological wake and sleep drives (Johns, 2000). Fatigue on the other hand has been associated with task performance. In addition, fatigue also has a psychological meaning: not having the energy to do anything, and a subjectively experienced reluctance to continue with a task (Brown, (1994). Thus, sleepiness is the urge for sleep while fatigue can be seen as a signal from the body that we should end the ongoing activity, whether it is physical activity, mental activity or just being awake. Sleeplessness can lead to fatigue hence the causes of fatigue and sleepiness may be different, the effects of sleepiness and fatigue man are very much the same that is a decrease in mental and physical performance capacity.

Fatigue or sleepiness can occur not necessarily due to inadequate of sleep. This type of fatigue is usually linked to the daily sleep cycle or the biorhythm. Hence at certain times in the 24-hour cycle the human body has a greater need for sleep than at other times. This happens most and lasts longest early in the morning (approximately between midnight and 6 a.m.) and, to a lesser extent, about 12

hours later (approximately between 2 p.m. and 4 p.m.). At these moments, there is a natural tendency to sleep, and if this cannot be given in to, a sleepy feeling occurs (leidschendam, 2010). In general, fatigue affects task performance: a reduction in alertness, longer reaction times, memory problems, poorer psychometric coordination, and less efficient information processing (Lyznicki, et al 1998; Brown, 1994).

Fatigue leads to diminished actual performance and decreased motivation to perform. These general effects on task performance are mirrored by similar effects when the task concerns driving. Fatigue therefore has consequences for driving behaviour. Though drivers may use compensatory strategies to ward off effects of fatigue, it should be noted that there are individual differences in how persons react and cope with fatigue (Oron-Gilad, & Shinar, 2000). For instance, researchers concluded that the major effect of fatigue include reduced decision making, reduced communication skills, reduced productivity, reduced attention and vigilance, reduced ability to handle stress. Drivers are however confronted with these effects as a result of either tiredness, irritability, depression and dizziness, etc. (Thiffault, et al 2003)

### **STATEMENT OF THE PROBLEM**

Kouabenan, (1985) identified three main factors to be responsible for road traffic accidents; which are environmental, technical or vehicle-related and human factors. Other studies have also established that human error (70- 93%) is a major underlying factor in the occurrence of road traffic crashes (NRSC REPORT, 2008). Fatigue generally causes low attention and alertness in all discipline of life and work of which driving is not an exemption.

Road accidents recorded in Cape Coast annually due to fatigue is about 2185 death with about 42 people dying weekly on Accra- Cape Coast road (Benyiwa-Doe, 2010). Cases of road accidents recorded this year have increased by 17% in the Cape Coast municipality from 540-632 cases as recorded by the MTTU. (MTTU, 2010) In all these human factors, fatigue in driving been one and a very important cause of road accidents, yet not much researches has focused on it.

Despite the various measures undertaken by government agencies and the municipality through the media to reduce or stop these accidents, it is still on increase. This implies that there are other factors responsible for these accidents of which fatigue in driving could be one of such factors that have been over looked. In modern 24-hour societies, getting enough sleep or rest is not always high on our priority. How many persons do know that fatigued interferes with their functioning perhaps as a driver? Hence the following research questions are begging for answer to ascertain the influence of fatigue in diving as a causal factor in road accidents. Answers to these questions will go a long way to solve and reduce road accidents on Ghanaian roads.

### **RESEARCH QUESTIONS**

1. What are the causes and signs of driver fatigue?
2. What are the effects of driver fatigue?
3. Does effects of driver fatigue impact on road safety?
4. How can driver fatigue be controlled?

In order to answer the research questions the researcher will attempt to identify factors responsible for fatigue on drivers and therefore make informed suggestion to solve the problem of road accidents identified in Cape-Coast.

### **AIM AND OBJECTIVES**

The study is aimed at an examination of the effect of driving fatigue in Cape Coast Metropolis using the following objectives

1. Explain the effects of fatigue on driving
2. Identify the causes of fatigue on driving
3. Highlight the common signs of fatigue

Findings from the study will be used to suggest appropriate measures to overcome or control driver fatigue.

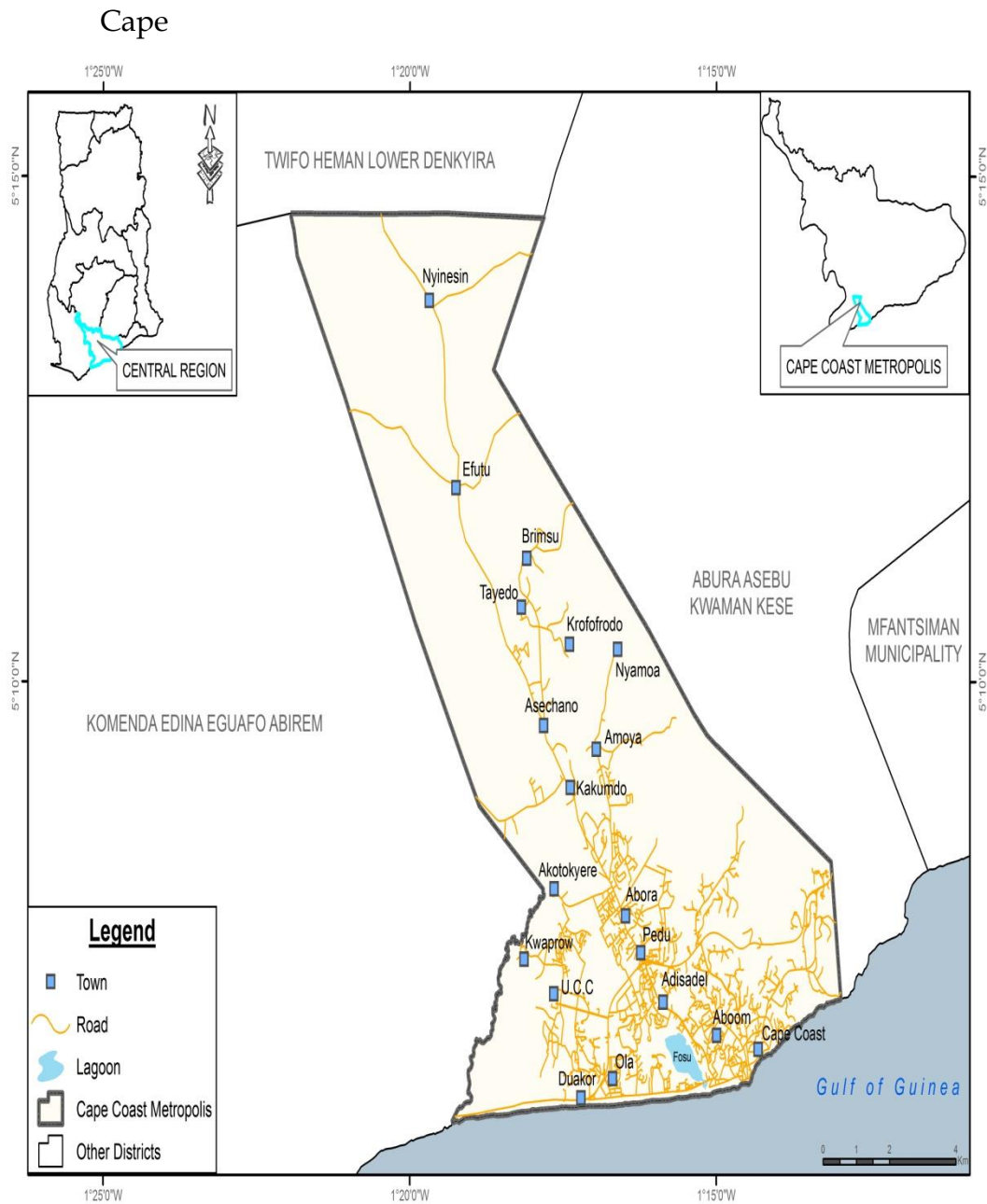
### **SIGNIFICANCE OF THE STUDY**

This study is being undertaken with the aim of adding more to the existing knowledge on the fatigue on driving. It will also help sensitize/ educate the public on the effects of fatigue on driving and therefore guide people against it.

### **THE STUDY AREA**

The study area is Cape coast metropolitan assembly. The capital city of the central region of Ghana is bounded on the south by the Gulf of Guinea, west by the Komenda / Edina / Eguafu/ Abrem municipality, the east by the Abura / Asebu/ Kwamankese district and the north by the Twifo /Hemang /Lower /Denkyira district. The metropolis covers a total area of 122 square kilometers and is the smallest metropolis in the country. Cape Coast metropolis is a historical and political geographical area in the central region. It served as an entry point for the Europeans in the 15<sup>th</sup> century and served as the seat of government of the then Gold Coast.

The dominant occupation of the people within the metropolis are farming and fishing, with a lower percentage in the service sector. With a population of about 126, 000, Cape Coast metropolis and indeed Cape Coast town is both the administrative and most viable commercial centre in the region. In addition to these function, its hosting of the castle and closeness to the Kakum National Park provide further useful resource for the promotion of tourism in the central region. The metropolis has a university, polytechnic and some of the best second high institution in the country. This has virtually turned Cape Coast into an educational centre, and providing job opportunities for various services (Abane, 2010) and therefore a lot vehicular and human traffic come and goes out of Cape Coast. Consequently the relevance of road traffic accidents relating to fatigue is indeed needful.



Source :( UCC, department of geography and regional planning, 2012)

## LITERATURE REVIEW

The concepts of “fatigue”, “sleepiness” and “drowsiness” are often used interchangeably. Sleepiness is an aspect of fatigue which is perhaps easiest to define. Sleepiness can be defined as the neurobiological need to sleep (NCSCR/NHTSA Expert panel on driver fatigue and sleepiness (2001), resulting

from physiological wake and sleep drives (Johns, (2000). Fatigue has from the beginning been associated with task performance. Psychologically fatigue is not having the energy to do anything, and subjectively it is the experienced reluctance to continue with a task (Brown, 1994). Thus, sleepiness is the drive for sleep while fatigue can be seen as a signal from the body that we should end the ongoing activity, whether it is physical activity, mental activity or just being awake. Although the causes of fatigue and sleepiness may be different, the effects of sleepiness and fatigue are very much the same, namely a decrease in mental and physical performance capacity.

Fatigue leads to a deterioration of driving performance, manifesting itself in slower reaction time, diminished steering performance, lesser ability to keep distance to the car in front, and increased tendency to mentally withdraw from the driving task. The withdrawal of attention and cognitive processing capacity from the driving task is not a conscious, well-planned decision, but a semi-autonomic mental process of which drivers may be only dimly aware. Drivers may try to compensate for the influence of fatigue, for instance by either increasing the task demands (e.g. driving faster so that a 'new' sensation of driving spurs adrenaline and attention levels) or lowering them (e.g. increasing the safety margins by slowing down or using larger following distances). But crashes and observations of driving performance show that compensatory strategies are not sufficient to remove all excess risk (Thiffault & Bergeron, 2003).

### **Types of fatigue.**

There are basically two types of fatigue; chronic and acute fatigue. A chronic lack of sleep is the result of not having enough sleep for a long period. The average person needs 8 hours of sleep in every 24-hour cycle. The quality of the sleep is also of great importance, besides the quantity. If sleep is regularly interrupted, this leads to a chronic lack of sleep, just as too little sleep does. The quality of sleep is influenced by, among other things, sleep disorders like sleep apnoea or narcolepsy. Apnoea or narcolepsy can however be a side effect of chronic diseases and/or medication or the result of external factors such as a noisy or unpleasant sleeping

environment. An acute lack of sleep is also the result of too little sleep, but is less structural than chronic lack of sleep. An acute lack of sleep can occur after just *one* bad or short night. There is a complete acute lack of sleep if there has been no sleep at all in a period of 24 hours (Åkerstedt, (1995)).

### **Causes of fatigue on driving.**

Knowledge of the causes of driver fatigue is important for deciding on appropriate countermeasures. Brown (1994) identified 5 general causes of fatigue in general and driver fatigue in particular; lack of sleep or poor sleep, internal body clock, time-on-task, monotonous tasks, individual characteristics including medical conditions

Fatigue is linked to the circadian rhythm. The body's circadian rhythm is an internal biological clock. It coordinates the physiological priorities for daily activities, including sleep, body temperature, digestion, performance, and other variables (Lal, et al (2001). Therefore, it has a direct effect on alertness, mood, motivation, and performance. The body's natural cycle, or circadian rhythm, plays an important role in how fatigue affects people. The human body has a greater need for sleep at certain times in the 24-hour cycle than at other times (Horne, 1992; Lal, et al, 2001). At these moments, there is a natural tendency to sleep and, if this cannot be given way to, a sleepy feeling occurs. Therefore sleep prior to work is the most prominent factor that influences the waking state, the level of alertness of the driver (Horne, 1992; Berg, van den, 2006).

Prolonged activity inevitably leads to physical and mental fatigue (O'Hanlon and Kelly, 1977). One of the causes of driver fatigue is the time-on-task or the time spent driving. The fatigue-inducing effects of prolonged driving may be decreased by taking frequent breaks (Philip, et al (2005). For professional drivers, the relevant time-on-task is better seen as the total work time including the time of driving. Professional drivers often perform many more tasks than the job of driving. For professional drivers, long working hours often go together with early waking and reduced sleep.

### **Effect of fatigue on driving.**

Generally, fatigue affects task performance; a reduction in alertness, longer reaction times, memory problems, poorer psychometric coordination, and less efficient information processing (Lyznicki, et al 1998). Fatigue leads to diminished actual performance and decreased motivation to perform. For the driver the main effect of fatigue is a progressive withdrawal of attention from the road and traffic demands, leading to impaired performance behind the wheel (Brown, 1994). Research has found that a person who drives after being awake for 17 hours has impaired driving skills comparable to a driver with a 0.05 blood alcohol level. A driver who has gone without sleep for 24 hours has impaired driving skills comparable to a driver with an illegal high BAC of 0, 1 g/l (Williamson, & Feyer, 2000). In the case of sleepy drivers, the ultimate impairment is falling asleep at the wheel. Åkerstedt et al. (2005) opined that driving after the night shift was associated with an increased number of accidents due increased eye closure and increased subjective sleepiness.

Hulst van der et. al. (2001) and Desmond (1998) that tired drivers have more difficulty regulating their attention and performance in situations with low task demand- straight road sections- than in situations with high task demands. And therefore drivers attempt to adapt their attention-level by changing speed on the roads that are not strait, may change sensory input which may then spur the body and mind to put in extra effort to notice and respond to signals from the environment (Riemersma et al, 1977; Hargutt,et al, 2000 ; Oron-Gilad, .et. al, 2000)).

### **Prevalence of fatigued driving**

In several studies of European professional drivers (both car drivers and truck drivers), it was demonstrated that long-distance driving often goes together with reduced sleep duration ((McCartt, et al 2000;Philip, et al 2005) :

A Finnish study looked at the combined effects of different forms of shift work, age, leisure-time physical activity, smoking, and alcohol consumption on the prevalence of sleep complaints and daytime sleepiness. The researchers concluded

that different shift systems, also 2-shift work and permanent night work, increase the frequency of sleep complaints. Especially 3-shift work seems to interact with life-style factors by increasing the adverse effects and decreasing the beneficial effects on sleep and sleepiness.

### **Fatigue and crash risk**

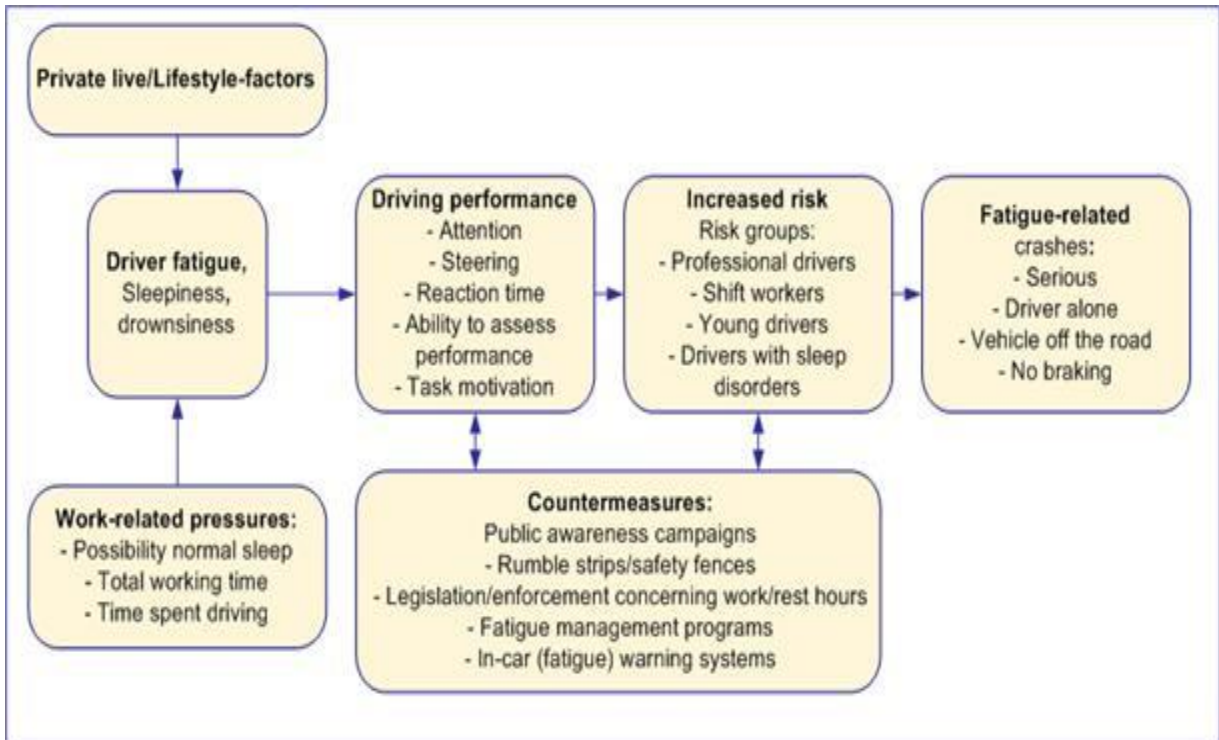
The finding that fatigue is involved in 10-25% crashes does not in itself prove that fatigue increases crash risk. For example, it could be that drivers who are more fatigued also drive more kilometers than other drivers so that the risk per kilometer is the same for fatigued and non-fatigued drivers. This could be due to the fact that nearly all the studies were unable to establish a causal relationship (Connor et al, 2001). And that research on fatigue and sleep apnoea in truck drivers has led to awareness of these problems and some modification of work conditions (Feyer, et al, 1997; McCartt, et al, 1997; Mitler, et al, 1997). Cummings et al (2002) however discovered that crash risk was fourteen times higher for drivers who had reported to have almost fallen asleep behind the wheel. Hence driving while fatigued increases a driver's risk of involvement in a crash or near-crash by nearly four times (Klauer, et al 2005).

Frequently a combination of situational and individual factors contributes to increased risk of being involved in a fatigue-related crash. The increased risk may result from a mix of biological, lifestyle, and work-related factors. For teenage drivers, the strong biological need for sleep and going out in weekend-nights may combine to increase fatigue and risk (Groeger, (2006). For professional drivers and long distance drivers, both reduced sleep and long working hours combine to increase fatigue and risk (Jettinghoff, 2003; Miller; 1980; Philip, et al. 2005).

Stutts et al (2000) found that drivers responsible for a fatigue related accident had more often several jobs, were shift workers or had unusual working hours. And that the crash risk due to fatigue significantly increases, if the driver sleeps less than 7 hours. Compared to driver averaging 8 hours of sleep or more, drivers who

sleep less than 5 hours per night on average are 6 times as likely to be involved in a fatigue related crash.

### Conceptual framework



Most of individuals or private lifestyle factors like going to work early, demand of car sales from commercial drivers by owners put a lot of stress on drivers making have inadequate sleep, drowsiness, and drive all day sometimes without resting therefore making them fatigued. The study intends to explain the effect of fatigue on these drivers. These go to affect driving performance in attention, steering, reaction time, ability to assess performance and task motivation. Increased risk groups include professional drivers, shift workers, young drivers, and drivers with sleep disorders. With these crashes may be serious involving drivers' alone, vehicle off the road, no braking etc. The study will identify the causes of fatigue, signs of fatigue and findings from the study will be used to suggest appropriate measures to overcome or control driver fatigue.

## METHODOLOGY

The explorative approach was used to obtain background information for the study from the 50 sampled respondents for the researcher to be able to explain whether there is a positive relationship between fatigue in driving and road traffic accident. The sample size of 50 persons is based on the number of vehicles that ply Cape Coast-Accra route however not all these vehicles go to Accra every day. The target population in the study comprised of drivers, passengers and pedestrians found at the 5 motor parks at the time of the fieldwork in the Cape Coast metropolis. These people were selected because they are the one plying Cape Coast- Accra route. As such talking to them would enable the researcher obtain certain vital information for the research. The motor parks include Tantri, Kotokuraba, Ford, Metro-tranport, and Pedu.

50 copies of the Rosenberg questionnaire format type was used in collecting the data from 10 persons (5 drivers, 4 passengers and 1 pedestrian) in each motor park. Both the open ended and close ended forms of questionnaires were included. The information from the respondents were the summarized into percentages in order to explain the findings.

### Discussion of Findings

It was established that majority (54%, 27 ) of the respondent were aged 30 and above, Since the study was concerned with fatigue in driving, these people who are 30 and above and in their most youthful stage and work very hard and gets fatigued easily.

Table 2: Distribution of Marital status of respondents

	Number	Percentage (%)
Single	23	46.0
Married	18	36.0
Separated	6	12.0
Divorced	3	6.0
Total	50	100.0

Source: author's fieldwork, 2015

Obviously majority (46%) of the respondents were single probably looking for money to marry hence work very hard without resting. They were followed by married people, those who are separated and lastly divorced couples.

The study revealed that those who had their last formal education up to the SHS/Commercial/Vocational/technical dominated with 68%(34) whereas those continued up to the university level were 32% of the total percentage of the respondents. This depicts that most drivers of the Cape Coast metropolis are relatively literate hence they might have some knowledge/ perception about fatigue (Table 3).

**Table 4: Respondents Driving Status**

<b>driving status</b>	Frequency	Percent
Commercial	31	62.0
Private	14	28.0
Company	5	10.0
Total	50	100.0

Source: author's fieldwork, 2015

Not only were majority (62.0%) of the drivers operating commercial, about 64% (32) do not even owned the vehicles. They (16, 32%) are therefore under pressure from vehicle owners for returns and at the same get some income for themselves. The drivers tend not have enough rest and therefore get exhausted/ fatigued while driving this revelation agrees with Åkerstedts (1995) assertion.

**Table 5: vehicle type of respondents**

Vehicle Type	Numbers	Percentage (%)
Taxi	20	40.0
Minibus	21	42.0
Trucks	6	12.0
Bus	3	6.0
Total	50	100.0

Source: author's fieldwork,2015

Some minibuses, trucks and buses are also used by private drivers to convey company goods from one place to another.

**Table 6: Respondent's Knowledge about fatigue**

Knowledge about fatigue	Number	Percentage (%)
feeling tired	24	48.0
insufficient sleep	10	20.0
long period of stress and anxiety	13	26.0
been bored	3	6.0
Total	50	100.0

Source: author's fieldwork,2015

Majority (48%) of the respondents agreed that feeling tired was fatigue. 26% explained that long period of stress and anxiety is a product of chronic fatigue as stated by Horne (1992). About 20% of the respondents identified insufficient sleep to be responsible acute fatigue this is in agreement with Åkerstedt (1995). Only 6% shared their opinion that been bored was fatigue.

As a natural phenomenon and do occur in all areas of life, all the respondent attested to that fact and hence agreed that they have all experienced fatigue before.

**CAUSES OF FATIGUE IN DRIVINGV TABLE : 1 CAUSES OF FATIGUE DRIVING**

<b>TIME OF THE DAY PEOPLE MOSTLY SLEEP</b>	<b>FREQUENCIES</b>	<b>PERSENTAGES</b>
<b>2-4HOURS</b>	1	2.0
<b>5-7HOURS</b>	26	52.0
<b>8-10HOURS</b>	21	42.0
<b>11HPURS AND ABOVE</b>	2	4.0
<b>TOTAL</b>	50	100.0

Most of the drivers (27, 54%) sleep less than 7hours a day. The average person needs 8 hours sleep every 24-hour cycle. Sleep prior to work is the most prominent factor that influences the working state, the level of alertness of the driver is influenced by his rate of sleep (Horne, 1992). The stresses then accumulate and become chronic.

From table 1, it is clear that the circadian rhythm do really work as 56% of the respondents attest to this fact. It is indeed true that there is a particular period of the day that the body gets fatigued.

**TABLE: 2 CAUSES OF FATIGUE DRIVING**

	<b>STRONGLY AGREE % (FREQUENCIES)</b>	<b>AGREE % (FREQUENCIES)</b>	<b>DISAGREE % (FREQUENCIES)</b>	<b>STRONGLY DISAGREE % (FREQUENCIES)</b>
<b>LACK OF QUALITY SLEEP</b>	50.00 (25)	40.0 (20)	10.0 (5)	-----
<b>TIME OF THE DAY</b>	14.00 (7)	54.0 (27)	24.0 (12)	8.0 (4)
<b>LENGTH OF TIME SPENT ON DRIVING</b>	32.0 (16)	44.0 (22)	24.0 (12)	-----
<b>SLEEP DISORDER</b>	38.0 (19)	50.0 (25)	10.0 (5)	2.0 (1)

Indeed 90% of the respondents agreed that lack of quality sleep as stated by Horne (1992) causes fatigue in driving. It was established that 68% agreed that the time of the day also contribute to the cause of driver fatigue.

Therefore, it has a direct effect on alertness, mood, motivation, and performance. During the period of 2pm and 4pm, the body experiences the circadian rhythm.

32% of the respondents disagreed to this.

From the data outcome, it was also known that driving length of time also causes fatigue as it was agreed by 76% of the respondents.

Prolonged activity inevitably leads to physical and mental fatigue. Researchers have related the duration of activity, to fatigue symptoms (Philip, et al (2005). The length at which one does any work including driving causes fatigue. The lengthy the time, the more the fatigue one gets. 24% of the respondents disagreed to this.

It was established that when one has a sleeping disorder, it does leads to driving fatigue as 88% agreed to this. The quality of sleep is influenced by, among other things, sleeping disorders e.g. sleep apnoea (a temporary breathing stoppage while sleeping) and narcolepsy (the tendency to suddenly fall asleep). But it can also be a side effect of chronic diseases and/or medication or the result of external factors, such as a noisy or unpleasant sleeping environment (Connor, et al (2001).

## SIGNS OF DRIVING FATIGUE

94% (46) of the respondents agreed that constant yawning during driving depicts that the driver was tired.

When a driver is tired, he loses focus and do not drive on the lanes and this is shown by the data collected as 92% (46) of the respondents agreed to this.

It was also established that delay in reaction is also a major sign of fatigue as 66% (33) of the respondents agreed to this. 34% of the respondents disagreed to this as a sign of fatigue. From the table, it is seen that 78% (39) of the respondents agreed that when one is tired, the speed at which he is moving vary. He possibly will want to reach early in other to rest so therefore move at a speed at which he might not be aware.

**TABLE: 3 CONSEQUENCES OF DRIVING FATIGUE**

	Strongly Agree % (Frequencies)	Agree % (Frequencies)	Disagree % (Frequencies)	Strongly disagree % (Frequencies)
REDUCED VIGILANCE	32.0 (16)	60.0 (30)	6.0 (3)	2.0 (1)
CARELESS DRIVING	16.0 (8)	52.0 (26)	14.0 (7)	2.0 (1)

As one gains more experience fatigue, he /she become reluctant in performing a task. This is confirmed by 76% (38) of the respondents who agreed that slower reaction time becomes an effect of fatigue in driving. Fatigue affects task performance: a reduction in alertness, longer reaction times, memory problems, poorer psychometric coordination, and less efficient information processing (Lyznicki, et al (1998).

Vigilance is affected by sleepiness and fatigue and this is agreed upon by majority of the respondents as 92% attested to this as an effect of driver fatigue.

With the use of vigilance tasks, fatigue research has shown that periods of normal performance (i.e. seeing signals on time and providing right response) alternate with short lapses in functioning (i.e. missing signals or responding very late) (Dinges, et al (1991).

If the level of vigilance is reduced, it leads to careless driving which this view is accepted by majority of the respondents. 84% of them agreed to this as an effect of fatigue whereas 16% disagreed with this.

The driver performs in a state in which he has no active attention for the driving task and performs on 'autopilot'. At a certain moment the driver 'awakes' and he or she cannot remember the foregoing drive period. This phenomenon has been labeled as 'Driving without awareness' and also as 'Highway hypnosis' or 'Driving without attention mode.

TABLE : 4 DRIVERS STRATEGIES TO OVERCOM DRIVERS FATIGUE

	Strongly Agree % (Frequencies)	Agree % (Frequencies)	Disagree % (Frequencies)	Strongly disagree % (Frequencies)
HAVE ENOUGH REST	80.0 (40)	20.0 (10)	-----	-----
DRIVE NOT MORE THAN 8HRS A DAY	42.0 (21)	40.0 (20)	16.0 (8)	2.0 (1)
TAKE REGULAR 15MINS REST/BREAK	12.0 (6)	58.0 (29)	28.0 (14)	2.0 (1)
AVOID ALCOHOL OR MEDICINE WHEN DRIVING	64.0 (32)	22.0 (11)	12.0 (6)	2.0 (1)
TAKE COFFEE	18.0 (9)	38.0 (19)	22.0 (11)	22.0 (11)
PLAY MUSIC LOUDLY	4.0 (2)	22.0 (11)	54.0 (27)	20.0 (10)
USE OF CHEWING GUM	22.0 (11)	46.0 (23)	18.0 (9)	14.0 (7)
CHARTING WITH OTHER PEOPLE IN THE VEHICLE	14.0 (7)	60.0 (30)	16.0 (8)	10.0 (5)
HAVING SOME REST	70.0 (35)	30.0	-----	-----

It was established by about 80% of the respondents strongly agreeing that having enough rest was the ultimate measure to overcome driver fatigue as all the respondents agreed to this. And that before you begin driving, be sure to have 7 to 8 hours of uninterrupted sleep before your trip

Just as the length of time in performing a task do cause fatigue, majority (82%) of the respondents attested to the fact of not driving more than 8 to 10 hours a day. With profit making being their main aim, some commercial drivers do not agree to this as 18% disagreed to not driving more than 8 to 10 hours a day.

Taking 15 minutes rest or break can ease fatigue as expressed by the majority(70%) of the respondents.

With their own personal reasons which could be habitual, 8% of the respondents disagreed that avoiding alcohol and medicine when driving was a measure to overcome fatigue in driving.

Alcohol use has a sedating effect, but alcohol consumed within an hour of bedtime appears to disrupt the second half of the sleep period (Landolt, et al (1996). With this as a fact, 86% agreed with 64% of the respondents strongly agreeing to that.

In looking for suggestions whether coffee, loud music and fresh air, chewing gum, charting with other people in the car and having some rest can help cure fatigue, it was known by the following results. 56% of the respondents agreed that coffee can help cure fatigue.

This could be as a result of their educational background as most of the people above the senior high school know of its future effects. 74% of the respondents disagreed that loud music and fresh air can help cure fatigue. Most of the respondents indicated that loud music do disrupt attention and fresh air also encourages sleeping.

This possibly accounts for the high level of disagreement. With chewing of gum, 68% of the respondents agreed to it as another measure to cure fatigue. This some said it because of its hot mint while others attributed it to the fear of swallowing it. 74% also agreed that charting with other people in the car will always keep you awake and therefore a good way of curing fatigue. With having enough rest been proven scientifically as the best way to cure driving fatigue (Horne, J.A. (1992), 70% of the respondents agreed to this fact (table 4).

To stay alert the 58% (29) of the respondents disagree to the fact that keeping fresh air circulating in the car that it discourages sleep. Also eating light foods helps to stay alert rather than eating heavy foods on the other hand makes one to become drowsy and therefore precipitate sleep. This was shown as 88% (44) agreed to this as a major fact.

## **CONCLUSION**

Information gathered from drivers and road users depicted that fatigue actually had significant effects on driving; a silent but important predicator of road accidents in the Cape Coast metropolis.

Fatigue experienced by drivers were due to their own making because most of them do not have enough rest or sleep and also drive for more than 10hours a day. This could be due to the fact that, majority of the respondent drivers were commercial drivers and therefore in an attempt maximize profit, they do not have enough sleep which lead to acute or chronic fatigue.

Drivers were not only aware of the effect of fatigue on their driving skills but developed strategies to overcome fatigue; taking coffee, chewing gum and charting with people in the car, play music as a way of curing fatigue when driving regardless of its long term effects.

## **RECOMMENDATIONS/ POLICY IMPLICATION**

Drivers should be encouraged to eat light foods and enough rest before driving and not to drive for more than 8 to 10hours a day.

They should also be encouraged to avoid intake of alcohol and medicine when driving.

All these will go a long way to help reduce the occurrence fatigue to drivers, its consequence and to help restore safety on the road.

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