

Research Paper

ATTITUDES TOWARDS SEATBELTS USE IN KUMASI, GHANA

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The Kumasi is one of the most endemic areas for road traffic fatalities involving vehicle occupants, in spite of efforts at encouraging vehicle occupants to belt-up. In order to mitigate the situation, it has been advocated that more vehicle occupants be encouraged to belt-up, unfortunately, usage rate is low. This study was therefore undertaken to ascertain reasons for non-compliance. An attitudinal survey was carried out at bus terminals, taxi ranks, and parking lots. The data analysis was done using Microsoft Excel spreadsheet and SPSS. In all, there were a total of 411 respondents. The predominant reported reasons for non-use of seat belts were No/faulty seat belt, forgetfulness and laxity in the enforcement of the seat belt law. It is recommended that, the National Road Safety Commission should collaborate with the key stakeholder institutions to ensure free, but mandatory retrofitting of seat belts in vehicles that are unequipped with one, alongside the rolling out of a strict enforcement regime for seat belt compliance.

Keywords: Attitudinal survey, Seat belt use, Seat belt law, Kumasi, Ghana

INTRODUCTION

Transportation undoubtedly, is the life blood of every modern society. It facilitates save and efficient movement of goods and people. This invariably results in the provision of access to education, health facilities, entertainment, and connecting families. It thus, supports economic growth and improves quality of life.

Road transport particularly, plays a very crucial role in the socioeconomic development of low-and-middle countries. Research has

established strong correlation between roads and human development. According to Watkins and Sridhar (2009), in low-income countries, communities living furthest from roads experience higher levels of poverty, lower levels of school attendance and worse health outcome.

In Africa, roads form one of the most important and valuable public assets as it carry about 90% of its passengers and major access to its rural communities, which forms

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the food basket of every nation (Arterial Roads Company Limited, n.d). It is thus, central to the socioeconomic life of the citizenry.

Road transport is the predominant mode of transport in Ghana, accounting for 94% of freight and 97% of passenger traffic movements (Ghana National Commission for UNESCO, n.d.). The medium term program of the Ministry of Roads and Transport does not however, envisage any substantial realignment of the overall transport modal mix (Salifu, 2008; as cited by Densu, 2011). Thus, Road transport would remain the backbone of the national economy for a little while longer.

Regardless of the pivotal role transportation plays in our modern world, the industry is saddled with enormous challenges. Road Traffic Crashes (RTC) is one of the challenges that both developed and developing countries are grappling with. Approximately 1.2 million people die prematurely each year in RTCs worldwide, with up to 50 million more injured. Over 95% of these deaths and injuries occur in low and middle income countries (Peden *et al.*, 2004). This horrid situation, impose huge socioeconomic burden on these nations. The cost of this carnage to these countries many of which already struggle with economic development, may be as much as 1-2% of their gross national product (Peden *et al.*, 2004).

RTC accounts for over 1600 fatalities annually in Ghana. Out of these fatalities, more than 40% are vehicle occupants (National Road Safety Commission, 2010). Kumasi, in the Ashanti Region of Ghana, is one of the endemic areas for road traffic fatalities. In 2009 alone, out of 102 road traffic fatalities in the Kumasi, 22.6% were vehicle occupants

(Building and Road Research Institute, 2010). Most of these vehicle occupants would not have died if they were restrained. There is mountain evidence that seat belts especially the three-point type, reduce the likelihood of driver fatality in RTC by 45% and moderate to serious injury by 60% (National Highway Traffic Safety Administration, 2001).

In light of this, the National Road Safety Commission (NRSC) and other key stake holders have over the years, embarked on road safety campaigns aimed at reducing carnage on Ghana's roads. In spite of these efforts, including the passage of seat belt law (Act 683, 2004), a study by Densu (2011) suggests that, seat belt use among front-seat vehicle occupants (18.6%) in Kumasi is relatively low. This study was therefore undertaken to ascertain reasons for non-compliance. The findings of this study among others will help the NRSC and the various stakeholders to develop more innovative ways to increase compliance level.

MATERIALS AND METHODS

The Government of Ghana through the NRSC and other stakeholder institutions have since the enactment of the seat belt law (Act 683, 2004), have embarked on series of road safety campaigns aimed at encouraging the travelling public to use restraints. In light of this huge investment and the low compliance level of belt use in Kumasi, it is expedient that an attitudinal survey is carried out to gauge the attitudes of people towards seat belt use.

The attitudinal survey unearths more complicated patterns of behavior, attitudes, and motivations with respect to seat belts (Christmas *et al.*, 2008) which are unavailable

through other survey types such as road side direct observation. In view of this, an attitudinal survey was conducted through questionnaire administration to assess attitudes towards seat belt use in Kumasi.

The questionnaire was designed guided by the objectives of the study and the study population. Preliminary interviews were conducted to experience at first hand, issues related to seat belt use. The essence of which was to elicit information as regards the fundamental attitudes and perceptions about seat belt use, and also to explore the reasons behind their behavior towards seat belt use. A series of questions were then developed to ascertain basic attitudes towards belt use. The survey instrument contained questions about frequency of seat use with respect to seating position and location, enforcement regime, and reasons behind non-belt use. In addition, personal information such as gender was included.

A minimum sample size of approximately 400 was determined based on the sample size formula (Adom-Asamoah, 2008) at 95% confidence level with 5% margin of error and Kumasi's population of 1,995,086.

The questionnaire was pre-tested at bus terminals, taxi ranks and parking lots in April 2010 after its design to examine the survey instrument's acceptability and readability. This was done by means of face to face interview with a sample size of 50. Out of a total of 50 subjects chosen, 41 of these respondents consented. Thus, the pre-testing resulted in a response rate of 82%. This was a clear assurance of the general acceptability of the

questionnaire. Besides, the process aided the expunging of vague and unneeded questions and the inclusion of relevant ones.

In all, 450 questionnaires were printed and administered in Kumasi, in April 2010. This was executed at bus terminals, taxi ranks, and parking lots. The survey sought information about the respondent's frequency of seat belt use; reasons for non-belt use; and general awareness about the seat belt laws. A total of 411 residents of Kumasi agreed to be interviewed during the two week questionnaire administration. These fully completed questionnaires served as basis for the analysis.

Data Analysis

All data analysis was carried out by a combination of Microsoft Excel spread sheet and Social Statistical Package for the Social Sciences (SPSS) version 16.0. After the administration of the questionnaires, each questionnaire was then reviewed and coded based on a previously developed coding scheme. A computerized database was then created for the coded questionnaires using Microsoft Excel spread sheet. These databases were then imported into SPSS 16.0 for cleaning. The data cleaning was very crucial as it helps in unearthing inconsistencies. Frequency tables and crosstabulations were generated for statistical analysis by SPSS. The chi-square test, which is a product of the crosstabulation, assisted in assessing statistical significance of the categorical variables involved in the crosstabulations operations.

RESULTS

Characteristics of Respondents

A total of 411 residents of Kumasi consented to be interviewed. Out of this number, male respondents (74.20%) were proportionally more than their female counterparts (28.50%). In terms of education, Junior High subjects were the highest (30.17%) and those with tertiary education, the least (17.76). A detailed characteristic of the respondents is shown in Table 1.

Reported Seat Belt use with Respect to Seating Position

In the survey, respondents were asked to indicate, how often they would wear a seat

belts while travelling in a vehicle. Detailed results of the responses are shown in Table 2. The results show that survey respondents who reported that they “Always/Often” use seat belt, wearing rates of drivers (30.6%) were proportionally higher compared with front (11.7%) and back seat passengers (7.5%). Similarly, front seat passengers also realized a higher seat belt use compared with rear seat passengers. In general, front seat occupants’ belt use was higher than rear seat passengers. Seating position thus influence restraint use.

Reported Seat Belt use by Gender

The survey sought to measure the extent gender has on seat belt use Kumasi. Table 3

Table 1: Characteristics of Respondents

Gender	Number (n)	Percent	Standard Deviation (SD)
Female	106	28.5	0.438
Male	305	74.2	
Educational Background			
Tertiary	73	17.76	1.07
Senior High School (SHS)	95	23.11	
Junior High School (JHS)	124	30.17	
Primary/None	119	28.95	

Table 2: Reported Seat Belt in Different Seating Positions

	Never% (n)	Rarely % (n)	Sometimes% (n)	Often% (n)	Always% (n)	Median	95% CI
Front-seat passenger (n=411)	25.1 (150)	36.5 (150)	26.8 (110)	3.2 (13)	8.5 (35)	4.00	3.550-3.770
Rear-seat passenger (n=411)	45.5 (187)	32.6 (134)	14.4 (59)	3.4 (14)	4.1 (17)	3.00	2.452-2.648
Driver (310)	3.5 (11)	3.2 (10)	62.6 (194)	5.8 (18)	24.8 (77)	4.00	4.019-4.221

Table 3: Seat Belt Use and Gender								
		Front Seat Passenger						Chi-Square Tests
		Always % (n)	Often % (n)	Sometimes % (n)	Rarely % (n)	Never % (n)	Total % (n)	Asymp. Sig Sig. (2-sided)
Gender	Female	17.9%(9)	6.6%(7)	45.3%(48)	16.0%(17)	14.2%(15)	100.0%(106)	0.000
	Male	5.2%(16)	2.0%(6)	20.3%(62)	43.6%(133)	28.9%(88)	100.0%(305)	
Total within Gender		8.5%(35)	3.2%(13)	26.8%(110)	36.5%(150)	25.1%(103)	100.0%(411)	
		Rear Seat Passenger						Chi-Square Tests
		Always % (n)	Often % (n)	Sometimes % (n)	Rarely % (n)	Never % (n)	Total % (n)	Asymp. Sig Sig. (2-sided)
Gender	Female	7.5%(8)	8.5%(9)	32.1%(34)	24.5%(26)	27.4%(29)	100.0%(106)	0.000
	Male	3.0%(9)	1.6%(5)	8.2%(25)	35.4%(108)	51.8%(158)	100.0%(305)	
Total within Gender		4.1%(17)	3.4%(14)	14.4%(59)	32.6%(134)	45.5%(187)	100.0%(411)	
		Driver						Chi-Square Tests
		Always % (n)	Often % (n)	Sometimes % (n)	Rarely % (n)	Never % (n)	Total % (n)	Asymp. Sig Sig. (2-sided)
Gender	Female	55.4%(36)	4.6%(3)	36.9%(24)	1.5%(1)	1.5%(1)	100.0%(65)	0.000
	Male	16.7%(41)	6.1%(15)	69.4%(170)	3.7%(9)	4.1%(10)	100.0%(245)	
Total within Gender		24.8%(77)	5.8%(18)	62.6%(194)	3.2%(10)	3.5%(11)	100.0%(310)	

illustrates the variation of seat belt use by gender. It can be inferred from the Table 3 that, there is a highly significant relation between seat belt use and gender ($p < 0.05$). The crosstabulation shows that, over all, not very many survey respondents reported that they “Always/Often” buckle up while travelling in a vehicle. However, a greater proportion of female respondents reported “Always/Often” using restraints compared with the male respondents regardless of seating position.

Though reported wearing rates were lower for males than females, seat belt use for both male and female respondents experienced

reduction from the front to the back seating position.

Reported Seat Belt use With Respect to Education

Table 4 shows variation of seat belt use by education. In general, there is a highly significant relation between educational level and seat belt use ($p < 0.05$). The results reveal that seat belt use did not differ consistently by educational level. Approximately 72.2% drivers with tertiary qualification reported that they “Always/Often” use seat belt, while SHS holders reported 42.8% usage rate. However, drivers with Primary/None qualification

Table 4: Proportion of Seat Belt Use by Education

		Front Seat Passenger						Chi-Square Tests
		Always % (n)	Often % (n)	Sometimes % (n)	Rarely % (n)	Never % (n)	Total % (n)	Asymp. Sig Sig. (2-sided)
Education	Tertiary	17.8%(13)	11.0%(8)	64.4%(47)	4.1%(3)	2.7% (2)	100.0%(73)	0.000
	SHS	7.4%(7)	1.1%(1)	31.6%(30)	36.8%(35)	23.2%(22)	100.0% (95)	
	JHS	4.8%(6)	0.0%(0)	18.5%(23)	34.7%(43)	41.9%(52)	100.0%(124)	
	None/Primary	7.6%(9)	3.4%(4)	8.4%(10)	58.0%(69)	22.7%(27)	100.0%(119)	
Total within Education		8.5%(35)	3.2%(13)	26.8%(110)	36.5%(150)	25.1%(103)	100%(411)	
		Rear Seat Passenger						Chi-Square Tests
		Always % (n)	Often % (n)	Sometimes % (n)	Rarely % (n)	Never % (n)	Total % (n)	Asymp. Sig Sig. (2-sided)
Education	Tertiary	5.5%(4)	11.0%(8)	43.8%(32)	23.3%(17)	16.4%(12)	100.0%(73)	0.000
	SHS	5.3%(5)	3.2%(3)	6.3%(6)	49.5%(47)	35.8%(34)	100.0%(95)	
	JHS	1.6%(2)	0.8%(1)	8.1%(10)	37.9%(47)	51.6%(64)	100.0%(124)	
	None/Primary	1.7%(6)	1.7%(2)	9.2%(11)	19.3%(23)	64.7%(77)	100.0%(119)	
Total within Education		4.1%(17)	3.4%(14)	14.4%(59)	32.6%(134)	45.5%(187)	100.0%(411)	
		Driver						Chi-Square Tests
		Always % (n)	Often % (n)	Sometimes % (n)	Rarely % (n)	Never % (n)	Total % (n)	Asymp. Sig Sig. (2-sided)
Education	Tertiary	5.5%(4)	11.0%(8)	43.8%(32)	23.3%(17)	16.4%(12)	100.0%(73)	0.000
	SHS	5.3%(5)	3.2%(3)	6.3%(6)	49.5%(47)	35.8%(34)	100.0%(95)	
	JHS	1.6%(2)	0.8%(1)	8.1%(10)	37.9%(47)	51.6%(64)	100.0%(124)	
	None/Primary	1.7%(6)	1.7%(2)	9.2%(11)	19.3%(23)	64.7%(77)	100.0%(119)	
Total within Education		4.1%(17)	3.4%(14)	14.4%(59)	32.6%(134)	45.5%(187)	100.0%(411)	

reported higher (17.55%) restraints use compared with JHS holders (12.8%). A similar trend was discovered among rear seat passengers, but a less consistent picture emerged among front seat passengers.

In spite of these inconsistencies, there was

however consistent variation between seat belt use by respondents with tertiary qualification and those with pre-tertiary qualifications.

Reported Seat use as a Function of Road Type

The attitude of the subjects in relation to

restraint use were further probed by asking them to indicate how often they would wear seat belts on two road types in the survey.

Table 5 compares the reported wearing rates on different road types. Reported seat belt use differs consistently by the two road types. On highways, 28.7% proportion of the respondents claimed they “Always/Often” use restraints compared with 18.8% on intra-urban roads. Thus, the respondents were more likely to use seat belt on highways compared with

urban roads. This suggests that road type has a huge influence on seat belt use.

Reasons for Non-Use of Seat Belts

Under this section, respondents were asked to indicate among a list of previously determined reasons for non-use of seat belt. Table 6 provides the detailed responses. The predominant reason for seat belt low compliance in Kumasi was “No/Faulty” (79.3%) seat belts. This was followed by forgetfulness and the fact that they are irrelevant for short

Table 5: Reported Seat Belt use by Road Type

	Never% (n)	Rarely % (n)	Sometimes% (n)	Often% (n)	Always% (n)	Median	95% CI
Location	Never% (n)	Rarely% (n)	Sometimes% (n)	Often% (n)	Always% (n)	Median	95% C.I
Town (n=411)	39.9 (164)	27.3 (112)	14.1 (58)	6.1 (25)	12.7 (52)	4.00	3.628-3.892
Highway (n=411)	29.4 (121)	21.9 (90)	20.0 (82)	7.5 (31)	21.2 (87)	4.00	3.166-3.454

Table 6: Proportion of Reasons for Non-use of Seat Belts

Reasons	Important % (n)	Moderately Important% (n)	Of little important% (n)	Not at all important% (n)	Median	95% CI
They are dangerous (n=411)	5.8 (24)	1.9 (8)	1.7 (7)	90.5 (372)	4.00	3.697-3.843
They are uncomfortable (n=411)	30.4 (125)	31.1 (128)	10.7 (44)	27.7 (114)	2.00	2.245-2.475
They are unnecessary for short trips (n=411)	52.8 (217)	11.4 (47)	18.2 (75)	17.5 (72)	1.00	1.885-2.115
They are likely to mess up my clothes (n=411)	14.1 (58)	17.0 (70)	32.8 (135)	36.0 (148)	3.00	2.809-3.011
They are easy to forget (n=411)	72.3 (297)	8.3 (34)	9.0 (37)	10.5 (43)	1.00	1.481-1.679
No/Faulty seat belts (n=411)	79.3 (326)	5.6 (23)	6.6 (27)	8.5 (35)	1.00	1.349-1.531

trips. Thus, the predominant key factors among others precipitating non-use of seat belt in Kumasi are “No/Faulty” seat belts and “Easy to forget”.

Knowledge of the Seat Belt Law

Knowledge of the seat law by every citizenry, particularly the people of Kumasi, is critical for the promotion and sustenance of vehicle occupant safety. The survey then sought to ascertain how well the residents of Kumasi are exposed to the details of the seat belt law. Based on the foregoing concerns respondents were asked to indicate whether it is mandatory for assorted vehicle occupants in different seating position to belt up. Table 7 illustrates how well the respondents are informed as the seat belt law.

From the responses, majority of the respondents showed good knowledge of the law, particularly for the driver, but they were not impressive with their responses as regards vehicle occupants in other seating positions. Most of the respondents (92.0%) indicated that it was illegal for motorists to travel unrestrained. However, fewer subjects were of the view that

it was lawful for the front and rear seat occupants to be restrained.

Enforcement

Traffic laws are designed essentially to ensure safe and efficient traffic operation. The compliance of these laws by road users among others rests essentially on their enforcement. In view of this, respondents were presented with a list of traffic offences and were asked to indicate how often these traffic laws were enforced. Figure 1, gives a graphic description of the extent of traffic law enforcement in Kumasi.

Among the list of suggested traffic offences, the respondents claimed that seat belt law was the least enforced in Kumasi. Considering front-seat passengers, 84.2% of the respondents indicated that the seat belt law was “Rarely/Very rarely” enforced in the event of blatant violation. Similarly, 93.7% of the subjects clearly stated that, back seat passengers were “Rarely/Very rarely” punished for the same offence.

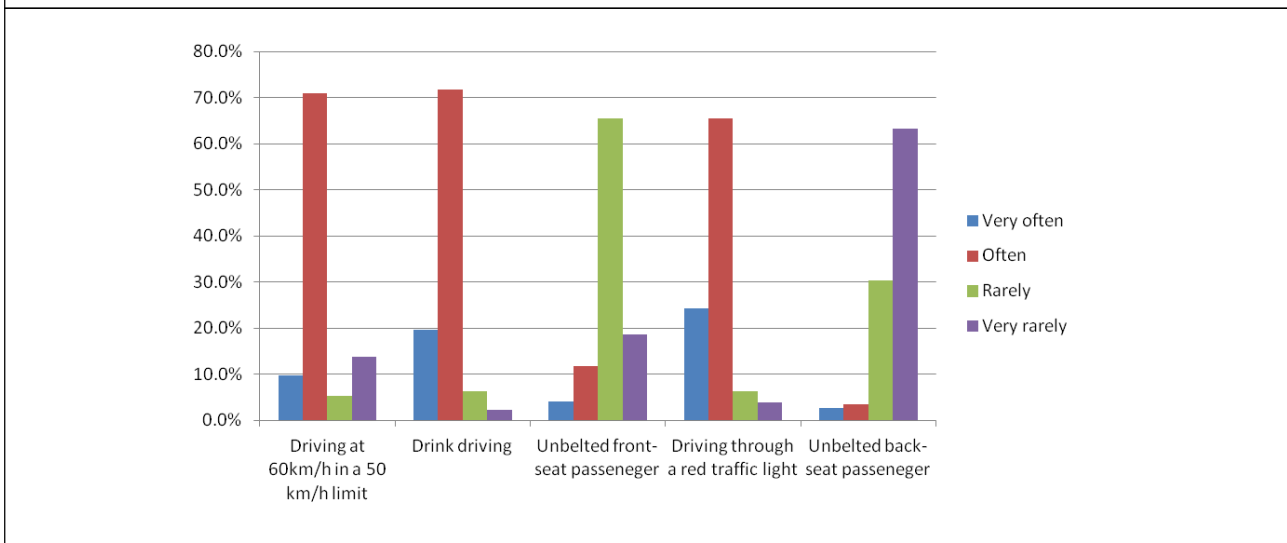
DISCUSSION

Seat belts though do not prevent RTCs, but have been proven to markedly reduce road

Table 7: Reported Knowledge of the Seat Belt Law

Of the following who do you think are required by law to belt?	Yes% (n)	No% (n)	Median	95% CI
The driver	92.0 (378)	8.0 (33)	1.00	1.054-1.106
Adult front-seat passenger	57.2 (235)	42.8 (176)	1.00	1.382-1.478
Child front seat passenger	46.0 (189)	54.0 (222)	2.00	1.492-1.588
Adult back seat passenger	25.5 (105)	74.5 (306)	2.00	1.698-1.782
Child back seat passenger	23.6 (97)	76.4 (314)	2.00	1.719-1.801

Figure 1: Comparison of Fine/Punishment For Some Traffic Offences



traffic fatalities and injuries in the event of a RTC. It is however worrying that the seat belt use among the travelling public in Kumasi is relatively low and influenced by a myriad of factors.

The Attitudinal survey revealed that seating position influenced seat belt use. The survey reported driver and front-seat passenger seat belt use rate of 30.6% and 11.7%, respectively. Similarly, lower use rate of 7.5% were reported for rear seat passengers. Thus, front seat occupants reported higher restraints use compared with rear seat passengers. This result is consistent with previous studies (Markey *et al.*, 1998; Kulanthayan *et al.*, 2004; Christmas *et al.*, 2008). This judgement could be motivated by safety and risk perceptions among the travelling public. Christmas *et al.* (2008) realized that, vehicle occupants have a high sense of safety sitting in the back seat, with solid seats in front of them, compared with the relative feeling of vulnerability as front-seat passengers with the road in front of them. For front-seat occupants, this leads to anxiety and

greater likelihood of wearing a seat belt, and sense of security for back seat occupants and this could make them ignore the possible dangers of an accident and thus, not wear their seat belts (Markey *et al.*, 1998). This attitude is retrogressive to the safety of vehicle occupants, as in the event of a RTC, unrestrained rear seat passengers could injure not only themselves, but also front seat passengers, regardless of whether the front seat passenger was wearing a seat belt (Markey *et al.*, 1998). This underscores the importance of sustained publicity and education campaigns that should aimed at encouraging the travelling public to be restrained regardless of seating position.

Restraint use was not only governed by seating position but road type. There was a high likelihood for respondents to use seat belt while travelling on highways compared with intra-urban road travels. Again, risk and safety perceptions may have accounted for this. Urban roads are normally associated with low vehicular speeds, compared with higher

speeds of the highways. High speeds while travelling suggests a greater risk of an accident with more serious consequences (Markey *et al.*, 1998). Hence, vehicle occupants feel very safe while travelling on intra-urban roads, but experience a high sense of apprehension on highways. This apprehension accounted for the high usage rate on highways compared with urban roads.

This trend is worrying because available data indicates that the devastating effect of RTCs is independent of road type. For example in Spain, 1146 fatalities were recorded on urban roads (Cunill *et al.*, 2004). Like wise, during the period 1991-2010, 29,892 road traffic fatalities were recorded on Ghana's road, approximately 33.3% (9950) of these fatalities occurred in the urban environment, of which 26.7% were vehicle occupants (Building and Road Research Institute, 2011). In light of this development, it is extremely imperative that, publicity and education campaigns be geared at increasing the severity of crash perception on Ghana's urban roads.

The seat belt law (Act 683, 2004) mandates vehicle occupant regardless of age and seating position to be restrained while travelling in a vehicle. The results of the survey however imply that, motorists were more obligated by law to be restrained, but less of other vehicle occupants. The import of this is that, a substantial proportion of the respondents are uninformed and hence unaware that the seat belt law applies to them. If the travelling public does not know that the law applies to them, they are less likely to comply. ETSC (2011) acknowledged that one of the conditions that must be fulfilled to guarantee

traffic rule compliance is that, the traffic laws have to be known by the road users. This knowledge gap is likely due to the approach adopted by the NRSC and other stakeholder institutions in the promotion of road safety on Ghana's road. In Ghana, publicity and education campaigns has over the years focused on, among other things the promulgation of crash statistics and the encouragement of the travelling public to be restrained while travelling, to the neglect of the details of the law. This has denied road users knowledge of the seat belt law. This underscores the need for the NRSC to roll out innovative and comprehensive education program that will not only address the safety concerns of road users, but also educate the travelling public on their statutory responsibilities. This knowledge though not enough to engender occupant safety, it is necessary to facilitates seat belt use and reduce road traffic injuries and fatalities.

It is essential to imbue the travelling public with details of the seat belt law. However it is useful to ensure that the law is enforced to ensure compliance. The results show that, the seat belt law enforcement compares poorly with other traffic laws. This is indicative of laxity in the enforcement of the seat belt law in Kumasi and hence the low usage rates. Traffic laws are designed essentially to ensure safe and efficient traffic operation. According to ETSC (2011), unconscious violation of traffic rules should be addressed by road and vehicle design, but conscious breaking of these rules must be addressed through police enforcement. For example, in Argentina, a seat-belt law was introduced in Buenos Aires in 1992 that raised wearing rates for drivers

from 6% to 32% but, due to lack of enforcement, rates subsequently declined to 13% by 1995. New laws and campaigns raised the rate to 22% by 2004, but the major gain was made through an enforcement effort that raised the rate to 77% by February 2005 (Silveira, 2005; as cited in FIA Foundation for the Automobile and Society, 2009). Thus, legislation though a necessary condition, it is not a sufficient condition to guarantee compliance. Legislation should not be enacted in isolation; it should however be part of comprehensive programs of sustained enforcement and public education and publicity campaigns to realize appreciable level of compliance.

Lack of seat belts and forgetfulness were identified as the predominant reasons for non-use of Kumasi. The high proportion of responses for “No/Faulty seat belts” suggests that, substantial proportion of the vehicle population in Kumasi is without seat belts. This is illuminating as it sheds light on one of the fundamental cause of the low compliance level and its attendant vehicle occupant fatalities in the city. This challenge is not peculiar to Ghana, but many low-and- middle countries are embroiled in this quagmire. In many low and middle income countries, most vehicles do not have functioning seat belts even if they installed (Forjuoh, 2003; as cited by Ameratunga *et al.*, 2006). This could be attributed to the importation of over aged vehicles into Ghana, as there is no legislation that bars their importation. These vehicles most often are not equipped with seat belts. In addition, there is no legislation that mandates vehicle owners to installed seat belts if their vehicles were not equipped with one. In most high-income countries, however, laws are put in place to

ensure that every road worthy car and light trucks have seat belts, and these seat belts are required to meet certain technical standards (Peden *et al.*, 2004).

This development is counterproductive to the efforts of the NRSC and other key stakeholders at reducing carnage Ghana’s roads. It is therefore, essential that the necessary legislation is enacted to ensure mandatory retrofitting of seat belts in vehicles, preferably free of charge. Amertunga *et al.* (2006) acknowledge that, the installation of seat-belts is arguably one of the most important safety measures with the potential to facilitate reductions in occupant injuries, in high-income and low income countries alike.

There are economic benefits associated with the implementation of this policy. For example in 1994 in the United Kingdom, after mandatory retrofitting of seat belt and 90% seat belt use rate in coaches, minibuses, and vans, the Department for Transport conducted an analysis to assess the savings realized through the exercise. A casualty savings of US\$ 5,250,000 was realized in coach crashes alone, when installations costs were compared with casualty costs. A net benefit of US\$ 1,725,000 accrued when installation costs was taken into account (Department for Transport, 1994; as cited in FIA Foundation for Automobile and Society, 2009). Ghana therefore stands to gain economically if a mandatory retrofitting seat belt program is implemented, but this should however be complemented with legislation that prohibits the importation of vehicles that are unequipped with seat belts. Besides, these seat belts should meet certain technical standards that

are comparable with that of high-income countries.

Forgetfulness as one of the key reasons for non-use of seat belts is supported by earlier research (Markey *et al.*, 1998). This may be the accumulated result of years of travelling unrestrained, exacerbated by vehicles that are unequipped with seat belts. Markey *et al.* (1998) found out that, most vehicle occupants easily forget to be restrained, because they are used to travelling in old vehicles that are not fitted with seat belts. This acquired habit can be broken by encouraging the travelling public to make conscious efforts at using restraints. In addition, motorists should be educated to remind vehicle occupants to be restrained before embarking on any journey.

CONCLUSION

The predominant reasons for non-use of seat belts in Kumasi were due to lack of seat belts in most vehicles, forgetfulness and laxity in the enforcement of the seat belt law. Besides, a significant proportion of the travelling public was unaware that the seat belt law applies to them.

RECOMMENDATIONS

1. There should be free, but mandatory retrofitting of seat belts in all vehicles, along side the rolling out of a comprehensive and sustained education and strict enforcement program to increase compliance in Kumasi.
2. Drivers must be educated and encouraged to constantly remind vehicle occupants to belt up before any trip for the purpose addressing the problem of forgetfulness associated with seat belt use.

3. For further research, an in-depth study should be carried out to unearth factors militating against the enforcement efforts of the Ghana Police.

REFERENCES

1. Act 683 (2004), Road Traffic Act, *Republic of Ghana*.
2. Ameratunga S, Hajar M and Norton R (2006), "Road Traffic Injury: Confronting Disparities to Address a Global-health Problem", *Lancet*, Vol. 367, pp. 1533-1540.
3. Arterials Toll Roads Company Limited (n.d), The Road to Ghana: A Toll Road infrastructure Case Study (www.atrcl.com/Road_to_Ghana_~_Joburg_v2.pptx, accessed 11th November, 2012).
4. Building and Road Research Institute (2011), "Road Traffic Crashes in Ghana, Statistics", *CSIR-BRRI*, Kumasi.
5. Christmas S, Young D and Cuerden R (2008), "Strapping Yarn: Why People Do and Don't wear Seat Belts. Road safety Research Report, 98, Department for Transport, London.
6. Cunill M, Gras M E, Oliveras M, Planes M and Sullam M J M (2004), "An Investigation of Factors Reducing Seat Belt Use Among Spanish Drivers and Passengers on Urban Roads", *Accident Analysis and Prevention*, Vol. 36, pp. 439-445.
7. Densu S N (2011), "A Survey of Seat belt use Among Front Seat Occupants in the Kumasi Metropolitan Area", Master's

- Thesis, Kwame Nkrumah University of Science and Technology.
8. ETSC (2011), "Traffic Law Enforcement across the EU: Tackling the Three Main Killers on Europe's Roads".
 9. FIA Foundation for the Automobile and Society (2009), "Seat-belts and Child Restraints: A Road Safety Manual for the Decision Makers and Practitioners", London.
 10. Ghana National Commission for UNESCO (n.d), Transport: Bedrock for Economic Development (www.natcomreport.com/ghana/hire/transport.pdf, accessed on November 11, 2012).
 11. Kulanthayan S, Raha A R, Law T H and Radin Umars R S (2004), "Seat belt use Among Car Users in Malaysia", *IATSS Research*, Vol. 28, No. 1.
 12. Markey K A, Buttress S C and Harland D G (1998), The Characteristics and Attitudes of Adult Non-wearers of Rear Restraints, TRL Report 222.
 13. National Highway Traffic Safety Administration (2001), "Fifth/Sixth Report to Congress: Effectiveness of Occupant Protection Systems and their Use", Washington DC, DOT-HS-809-442.
 14. NRSC (2010), "Road Traffic Crashes Statistics", <http://www.nrsc.gov.gh>, accessed on April 10, 2010.
 15. Peden M, Scurfield R, Sleet D, Mohan D, Hyder A A and Mathers C (Eds.), (2004), World Report on Road Traffic Injury Prevention. World Health Organization, Geneva.
 16. Watkins K and Sridhar D (2009), "Road Traffic injuries: The Hidden Development Crisis", *A Policy Briefing for the First Global Ministerial Conference on Road Safety*, Moscow.
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