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MOTORCYCLISTS ON RISK MANAGEMENT IN  
MARYLAND COUNTY**

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**Volume No.3 Issue No.2 June 2014**

**[www.iresearcher.org](http://www.iresearcher.org)**

**ISSN 227-7471**

THE INTERNATIONAL RESEARCH JOURNAL "INTERNATIONAL RESEARCHERS"

[www.iresearcher.org](http://www.iresearcher.org)

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## AN ASSESSMENT OF THE PERCEPTION OF MOTORCYCLISTS ON RISK MANAGEMENT IN MARYLAND COUNTY

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### ABSTRACT

**Purpose:** To determine the perception of private and commercial motorcyclists on risk management as precautionary measures in reducing the incidence of accidents, injuries and death. Since the end of the Liberian Civil Crisis, motorcycles have become the major conduit for transportation in Maryland County. It is estimated that by 2015 more than 75% of the population will use motorcycles for transport purposes. Maryland County population is fast growing and faces enormous challenges in terms of infrastructure and roads are far from appropriate to meet transportation demands. **Methodology:** A reviewed of literature published; interviews and self-administered questions were used to collect relevant data for the study and assisted by senior nursing students of William V.S Tubman University, Department of Nursing. Criteria for inclusion in the study were that the published literature considered motorcyclists concepts, behaviors and efforts to regulate and utilized safety wears and adherence to traffic safety. In addition, only active riders were interviewed. Motorcyclists who were not currently riding in the traffic were excluded. 75 motorcyclists were randomized for every 4<sup>th</sup> motorcyclists. **Findings:** Motorcyclists are 57 times more likely to experience accidents that may result to injuries and death than passengers in commercial or private vehicles. Head injuries are the leading cause of death resulting from motorcycle colloid in Maryland County. 13.3% of motorcyclist were wearing helmet during an accident. More than 50% of motorcycle accidents involved other vehicle. Bad road contributed to 45% of motorcycle accidents. 70.3% of motorcycle accidents occurred under maladaptive behavior to stress. 60% of motorcyclists rid 10 or more hours per day. 45.3% begun ridding motorcycle at age 21-24 years and 6% at age 17-20 years. 44% of motorcyclists accepted to wear safety wear as measures to reduce the incidence of injuries during accidents. 52% of motorcyclist's advice their colleagues to use protective wear only when danger for accident is perceived while 25.3% preferred using protective wear at all time when riding motorcycle. The government of Liberia is still struggling to decentralize reconstruction of infrastructures and basic social services and the geographical location of Maryland County has escalated problem. Public transport system in Maryland County is unregulated by local and central government of Liberia and leaving Motorcyclists Unions to operate an ineffective organization. Regular fees pay by motorcyclists to Motorcycle Union for sustainability of the Union and neglecting insurance coverage. **Conclusion:** National efforts to regulate motorcyclists activities is hampered by limited resources, weak will of law enforcement officer to enforce traffic safety rules and inaccessible transport roots are road blocks that need to be reconstructed to actualize and enforce risk management amongst motorcyclists. 90% of motorcyclists who do not use safety wear like helmets, gloves, long pints, shoes etc. and filling to observed traffic safety regulations: speed limits, approach to curves, hills and do not take proper training are at risk for accidents, injuries or death. To improve the overall safety of motorcyclists, passengers and pedestrians, all stakeholders should embark on quarterly workshop for sensitization on traffic rules and safety, reinforcement of laws that will penalize violators including the police, motorcyclists, motorcyclists union, pedestrians and other authority figures. In addition, regulation on motorcyclists carrying more than one passenger especially pregnant women, under-fives and critical patients' need to be abolished. It is imperative that these measures should be put into place and enforce with bias

### Keywords

1. Grebo: One of the 16 tribes of Liberia located in the southeast
2. Harper city: The Capital City of Maryland County in Liberia
3. Under-fives: Children less than five years of age
4. Critical patients: Patients whose health situation needs emergency care
5. Private motorcyclists: Individuals who do not commercialize riding motorcycle
6. Commercial motorcyclists: Individuals who commercialize riding motorcycle
7. Ganta-Harper highway: One of the routes that connects north to southeast of Liberia.
8. Deplorable roads: Roads that contains pot-holes and collection of muds

9. Liberia Institute of Statistics and Geo-Information Services: an agency of the Liberian government.
10. Hit-and-run: motorcyclist collision with public or private property, pedestrians or another vehicle and escaping from the scene.



School age kids on a Motorcycle



Pregnant woman as a passenger Under five/ adolescents

## 1. INTRODUCTION

Motorcyclists are the major means of transporters in Maryland County. Infants, pregnant women and the elderly are constantly being transported. Many people preferred them because they are fast moving and "more convenient" on the deplorable roads network in the county. Other medium of transport includes private cars, taxis, minibus and walking. There is absolutely no public transport system in Maryland County because of limited government resources and deplorable roads network in rural Liberia. Because of the limited options for transportation, private cars owners commercialize their vehicles at parking stations to travel with passengers to various destinations including the Liberian capital Monrovia. These private cars owners avoid the payment of taxes with the help of the police. If the private car commercializing transport is arrested by police, the driver of the vehicle settled the police behind the scene, and will allow the driver to drive his passengers to their various destinations: A 'normal routine' for every police-driver interactions. Some commercial drivers term this interaction as 'mutual existence' for police and drivers. If in the event a police arrest a driver for commercializing a private vehicle and decides to uphold the ethics, norms and values the police profession, there will be no on spot settlement but rather the vehicle driver will either be issue a ticket of heavy fine usually in United States Dollars to be paid in a designated government bank before the vehicle will be released from the police station.

Motorcycles are used to transport people to work, school, fulfill a business trip and for patient seeking healthcare even during emergency. The roads in Maryland County are not paved and become more appealing during the wet season. Maryland County is one of the remote counties located in the southeastern region of Liberia. Maryland covers 887 square miles with a density of 155. According to Liberia Institute of Statistics and Geo-Information Services, the population of Maryland increased from 69,267 to 1 35,938 of which 47.7% are male. Giving the location of the county from the Liberian capital Monrovia, the county is challenged with delivery of basic social services and an increase in the cost of living. The price of goods and services in Maryland double or triple that of Monrovia, and citizens of the county are using neighboring Ivory Coast for easy trade market.

The predominant use of motorcycles in Maryland County for private or commercial purposes is a concerned with limited or no safety measure as triggered debate all sectors. Risk management is concerned with the use of the appropriate safety wears, observation of traffic rules, adequate training, minimal passenger loading and proper maintenance of the motorcycle. The main focus of risk management is that passengers, pedestrians and

motorcyclists are safe if accident is inevitable. The rider who appreciates the worth of risk management is the rider who experiences fewer collisions. Thus, an experienced rider knows all the parameters of risk management. Many studies have shown that the proper use of safety helmet is an effective way to reduce the severity and fatality among motorcyclists during collision. However, some motorcyclists in Maryland County ride at undue speed and carry up to four passengers, which contravene traffic and safety rules. Many of the motorcyclists do not wear safety head gears or helmet.

It is important to consider the education of motorcyclist. Whether formal or informal, motorcyclists will be educated on risk management. Many motorcyclists start running-traffic after a friend or relatives have taught them to ride. Emphasis during this process is on starting and controlling the motorcycle when ridding and in some cases putting on switches of the motorcycle. This form of motorcycle riding training is frequently used in the Maryland County. Because of limited knowledge on risk management, incidence of motorcycle accident will always be on the increase. There are various approaches to risks management that could be employed by motorcyclists: helmet, hand gloves, goggles, shoes or boots, long clothing or protective pads for knee and elbow, accommodating one passenger, observation of traffic warning signs, proper maintenance and repairs, avoiding drunk driving and ensuring that the motorcyclist vision is effective during day and night times, a better possible stable state of health before and during the ridding of the motorcycle.

The police authorities' documented more than 65 accidents in 2012 in Maryland County were due to non-compliance with safety rules. According to the police, the number of unreported accidents exceeds the reported accident cases. The police suggested that accidents could have been avoided but some motorcyclists are unaware of safety rules coupled with limited police presence in most of the neighborhoods as well as the absence of road signs in some areas could be the cause of contributing factors of accidents in Maryland County.

The police authorities are unable to regulate and enforce these safety measures because of lack of logistics. Motorcyclists are constantly capitalizing on police deficiencies and rid motorcycle throughout the county with limited or no safety wears and violate traffic rules at will. Motorcyclists are involving in community crimes such hijacking, thief of properties and some occasions kill pedestrians on a hit-and-run without liability.

Injury sustained by motorcyclists, passengers or pedestrians from motorcycle riding overwhelms Maryland County healthcare system. With the facing-out of Non-Governmental Organization (NGOs) the service delivery of patients are challenged with limited skilled healthcare providers and healthcare resources. Populations of Maryland County are increasing becoming victims of substandard drugs and "black baggers" and medicine stores are the real source of healthcare delivery in Harper City and the villages of Maryland County.

It is evident in numerous occasions that James Jenkins Dossen Memorial Hospital is not equipped to manage severe cases such as fracture of bones of human body. There are four doctors at the hospital with no Orthopedists. Some of these doctors are also contractors of private institutions and as a result many patients are left unattended. If motorcyclists, passengers or pedestrians sustained head injuries in a motorcycle accident, a death sentence will be eminent. The hospital usually referred sub-complicated and complicated cases to Nimba County Jackson F. Doe Memorial Hospital in the north or John F. Kennedy Hospital in Monrovia. This becomes an economic burden for the families of the victim of motorcycle crashed because many families in Maryland County are deeply rooted in the county and have never travel to other parts of Liberia including Monrovia. Secondly, with more than half of Maryland population falling below the poverty line, many victims cannot afford the cost of healthcare in these various institutions and locations.

Victims and families of victims been challenged by these drawbacks in the Maryland County Healthcare System optimize alternatives to relief unpleasant symptoms as a result of motorcycle accident. The victim is taken to herbalists who in most cases succeed in properly repair of the fractured born sometimes when the hospital failed. If the herbalist failed to repair the fracture bone of the extremities and patient could surface at the hospital and the hospital will consider amputation depending on the extent of damage to underlying tissues.

According to Liberian Motorcycle Transport Union (LMTU) union local authorities, registered motorcyclists represent approximately 50 - 60% of all cyclists riding in the area with a total of 2500 motorcyclists in the county. Some estimates more than 3000 motorcyclist because of the vast geographical location and the inability of the motorcyclist union to extend their operations to the remote parts of the County.

## 2. OBJECTIVE OF THE STUDY

The objective of the study is to assess the perception of motorcyclists on risk management as they use motorcycle for public or private transportation on the deplorable roads of Maryland County.

## 3. RESEARCH QUESTIONS

The research questions for this study were:

1. What do motorcyclists think about risk management?
2. What are the reasons for riding motorcycle?
3. What preventive measures are taking by motorcyclists when riding?
4. Do motorcyclists have training on risk management?
5. What are the outcomes of non-compliance to risk management?
6. Why do accidents occur?
7. How effective are the traffic police on enforcing traffic regulation?
8. Which age groups are most involved in motorcycle riding?
9. Under which conditions do motorcyclists ride motorcycle?

## 4. HYPOTHESIS

Motorcyclists who ride motorcycle without using safety wears and filling to abide to traffic safety regulations are more at risk for accidents and injuries than those who use safety wears and abide by traffic safety regulations.

## 5. METHOD

In this randomized sampling, 75 participants had to be older than 16 years. The interviewees were randomized at motorcycle parking lots at William V.S Tubman University campus, Harper City and Plibo City packing stations. Personal and semi-structure interviews with local police authorities, healthcare providers at the government only referral hospital in the county (J.J. Dossen Hospital), review of relevant literature and members of motorcyclists union were considered in the data collection. Data was collected between July and October 2013. The data were verified, and synthesized to place the evidence within the context of past, the present, and the future. Sample size was calculated based on the anticipated level of risk to accidents involving the motorcyclists in Maryland County. Administration of the questionnaire was assisted by the graduating senior nursing students of William V.S Tubman University located in Maryland County.

The interview was in English. On a few occasions interviewee preferred responding in local Grebo vernacular. The Grebo tribe is predominant inhabitants of Maryland County but also a mix cultural diversity including all 16 tribes of Liberia and foreign nationals who work in public or private sectors. Interviews were conducted with the consent of the interviewees and the clarity that confidentiality will be preserved.

The registered motorcyclists account for approximately 40 - 50% in the area. The police authorities placed risk levels at 50 - 60% amongst the motorcyclists because motorcyclists refused to use protective wears and observed speed limits.

## 6. RESULTS AND DISCUSSIONS

**Table1. Age breakdown of motorcyclists**

Age in yrs.	Frequency	Percentage
17-20	6	8
21- 24	34	45.3
25-28	20	26.7
≥30	15	20
Total	75	100

The age group most frequently involved in riding motorcycle for commercial or private are those within the range of 21-28 years representing 72%. The accommodation of more than one passenger per ride by these age group is a serious challenge to risk management because these riders are beginners who are either took on the initiative themselves or been taught by peers or family member. Motorcyclists within the age group of 17-20 years are commercial riders and most often played down risk involve because of knowledge deficit on risk management.

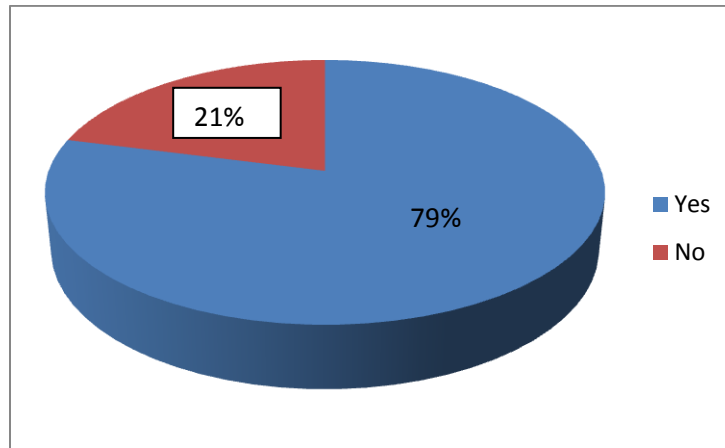


Figure 1. Motorcyclists Use of Safety Wears

According to figure 1, 79% of motorcyclists do not use safety wears during private or commercial transportation. Notwithstanding private riders do not commercialize their motorcycles; they usually assist friends or relatives on a free ride basis most often carrying more than one passenger per ride.

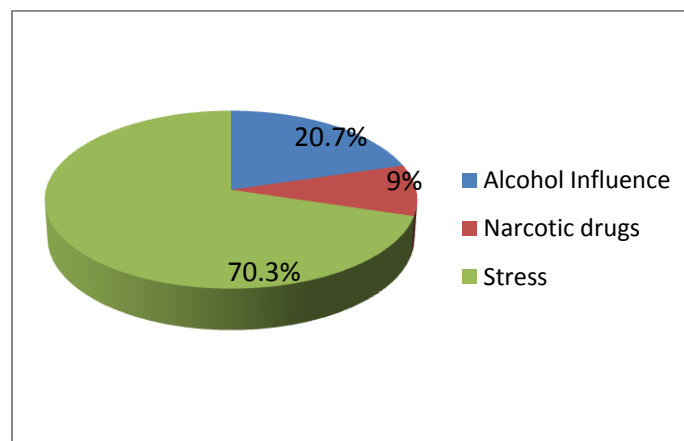
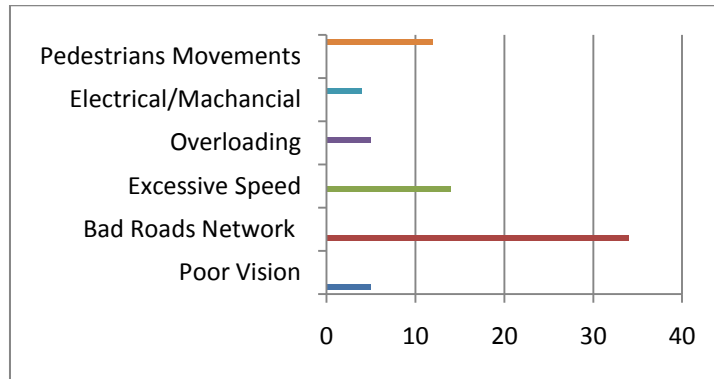


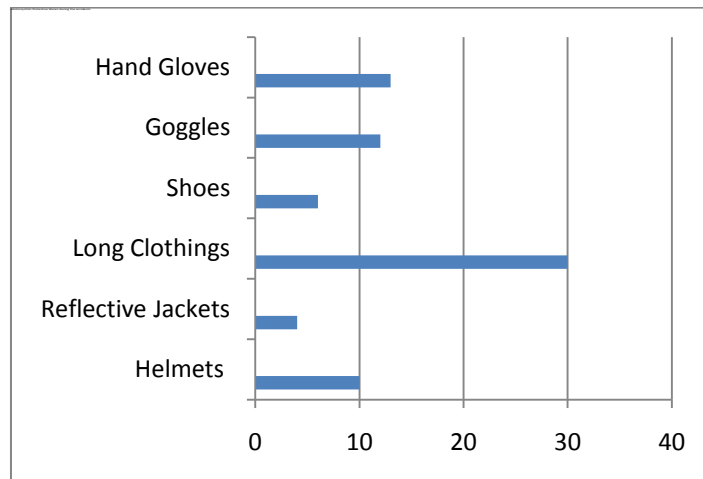
Figure 2. Conditions under which motorcyclists ride

Figure 2 showed that motorcyclists ride under stressful conditions. This condition come in different forms including but not limited to inconsiderate motorcycle owner who contracted the rider and rider been bread winner of his family needs to settle family bills including his children school fees, feedings and other domestic activities. According to motorcyclists they used narcotics and increase alcohol consumption to “relief stress”. These motorcyclists did not acknowledge the risk involve to passengers, pedestrians or themselves when riding under these influences.



**Figure 3.** Reasons for motorcyclist accidents

According to motorcyclist (45%) attributed bad roads network in Maryland County is the major reason for accidents. Motorcyclists do not employ precautionary measures in observing speed limits and the possibility of pedestrian’s movements on the road when riding. The combinations of these reasons outlined by motorcyclists have disastrous consequences that are continuously play down evident by day-to-day observations.



**Figure 4.** Protective wears use by motorcyclist

Figure 4 showed an observational investigation during motorcycle accidents, 40% of motorcyclists were wearing either long trousers, shirts and socks. These protective wears when worn by motorcyclists or passengers serves as barrier between the skin and rough surfaces and help to abrasions.



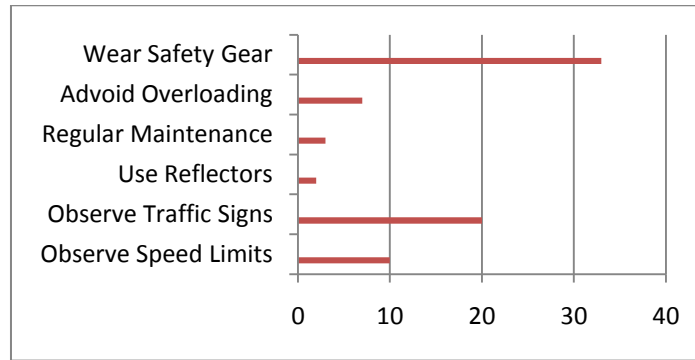


Figure 5. Measures to reduce the incidence of accidents

Reducing the incidence of accident is a major risk management motorcyclists should consider. Wearing safety gear (44%) was the highest rank safety measure. In considerations of other safety measures, motorcyclists need to consider other factors that may contribute to accident. These include observing traffic signs (26.7%), speed limits (13.3%) and avoiding overloading. The use of reflector signals approach motorcyclist or vehicle to recognize any rider of the drive way. Spare parts for motorcycle and vehicle is a serious challenge in Maryland County. Spars are purchased in Monrovia by vendors and sold at exorbitant prices. As a result repairing motorcycles by owners is perceived calculation to maintain its current defective state in the traffic to generate sufficient income for repairs. Motorcyclists usually ride with weak brake, smooth ties, and dim lights

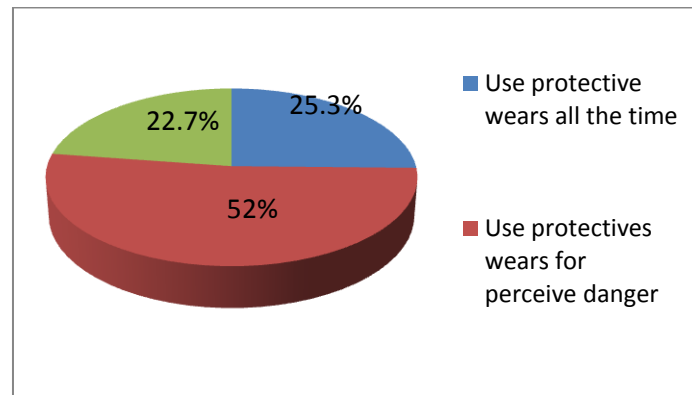


Figure 6. Motorcyclists advise to their colleagues

Considering the implications of riding motorcycle without safety wears, motorcyclists are extending cautious messages to fellow motorcyclists to reduce the incidence of injuries. About 52% of motorcyclists preferred wearing protective wears only when danger in perceiving compare with 25.3% of motorcyclists who prefer the use of protective wears all the time irrespective of perceived danger or regular police checks, 22.7%.

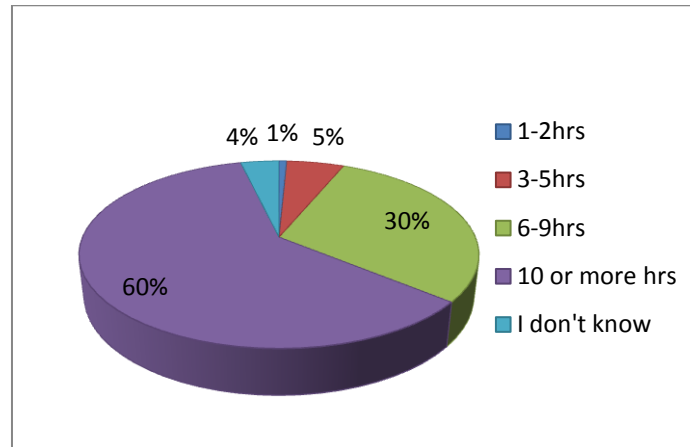


Figure 7. Motorcyclists who ride everyday

Most commercial motorcyclists spend much of their time in traffic trying to earn a "little more" than what is required by the motorcycle owners. This "little more" helps motorcyclists to settle some financial bills of his family including food and his children school fees riding ten hours a day.



Figure 8. Motorcycle-vehicle collision on Ganta-Harper high-way

## 7. DISCUSSION

Motorcyclists are major transporters in Maryland County. Notwithstanding other vehicles like trunks, taxi and private cars are available; the decision to select either of these depends on the urgency of the trip, the preference to dropped passengers to their destination, the cost of the ride and because the roads are not well maintained. The government of Liberia has banned motorcycle taxis in the capital Monrovia. Police said the motorcyclists cause many accidents and many of them steal from the passengers. An announcement made on state radio and any cyclists caught in the city centre and main roads will have their motorcycles confiscated and will be asked to pay a fine of an equivalent of 200 US dollars. Motorcycle taxis are the main means of transport in Liberia and in many other African cities, but reports from different countries say they are responsible for most of the accidents in the cities. Motorcyclists are seen on every streets of Maryland County unlike the Liberian capital Monrovia. Due to residents of Monrovia reaction to the ban and have called upon government to put in place alternative means of transport. The

Liberia National Police has announced several adjustments made in the recent restriction placed on motorcyclists from plying main streets in and around Monrovia. The Police decision followed days of mixed public reactions dominated by opposing views with some alarming difficulties in the transport sector here in the absence of main route motorbike riding.

Deputy Police Director, Abraham Kromah and Police Spokesman Sam Collins, both informed the public that the main route from the Paynesville Red-light to GSA Junction; Jallah Town route to the former Health Ministry, and Grand Cape Mount County to Bong Mines Bridge were available to motorcyclists. The main routes beyond the GSA Junction from the Liberia Broadcasting System or LBS Junction in Paynesville of Broad Street, and red-light through Gardnerville to the Freeport of Monrovia are 'No go zones for the motorcyclists.' "Those in Central Town will be escorted to buffer zone where they will run traffic; then when they knockout, they will pack their bikes and come to town." Sam told the radio show yesterday. These restrictions do not apply to Maryland County and other rural regions of the County. They are readily available to travelers and can reach the most remote areas of the county. Because of these reasons spelled out, the purchasing of motorcycles for commercial or private use is on the increase. According to the motorcyclists union in Maryland County, keeping track of registered motorcyclists is a huge challenge. The Motorcyclists Union was established without an art but is recognized by local government to regulate motorcycles activities in the county, ensure the safety of motorcyclists, passengers and pedestrians. There is no social security or other benefits such as medical bills clearance but motorcyclists need to pay an unstable fee under the cover of sustaining the union. Because of these backdrops motorcyclists are filling to cooperate with the union. Most of the motorcyclist reported that the motorcyclists union is not well structure and ineffective to monitor and control motorcyclists activities. As a result, the issue of motorcyclists using safety gear when riding is laughable. Neither the national police nor the motorcyclists union is able to enforce the use of safety wears as a measure of risk management. Both members of the local national police and motorcyclists union are transported by motorcyclists and sometimes the use of their personal motorcycles without safety wears. According to the study 79% of motorcyclists do not use safety gears either for themselves or passengers. Only 15% use helmets and 59% wear slippers when riding motorcycles instead of shoes or boots. The transportation of passengers by motorcyclists is also a critical issue. Because there is absolutely no regulation, under-fives children, pregnant women disables, critical patients in root to the hospital and the elderly are frequently been transported by motorcyclists. In hard to reach areas motorcycles are the best ambulance to transfer patients to health center, clinic or hospital.

With the deplorable roads network, the picture is glaring on the impact of riding motorcycle. Some passengers buy their own helmet and use it when they are been transported by motorcyclists because in the event of accident, head injuries is the major cause of death since Jenkins Dossen Memorial Hospital is not equipped to manage head injuries. Preventing accidents is one of safety measures but motorcyclists attributed poor roads network 45.3% and 18% excessive speed as major causes of motorcycle accidents. In other to reduce the incidence of accidents, the government of Liberia has posted marked speed limits and indications for approach to curves, hills and bridges on major roads. But this initiative is having later or no impact on reducing motorcycle accidents. The study shows that 70.3% of motorcyclists rid motorcycles under stress. Stressful situation under which motorcyclists rid includes domestic pressure of feeding and supporting families, daily reporting of traffic money to motorcycle owners and continuous police harassment. The owners of motorcycles received 'daily report money' from a contracted motorcyclists. If for any reason the required amount is short, the owner of the motorcycle deducts the deficit from the wage of the motorcyclists and in some situations dismisses the motorcyclists. According to some motorcyclists to compensate for the deficit before reaching the owner of the motorcycle, he credits money to make up for the deficit to sustain his job. The reasons for the deficit are numerous including constant police harassment and tips and limited or no passenger for a destination. The local police pretend to monitor risk management of motorcyclists. The police arrest motorcyclists for excessive speed, overloading with goods or four passengers on a motorcycle, riding with slippers, transporting under-fives and pregnant women. These are false pre-tends arrest because in split seconds of the arrest, the police is bribed and the motorcyclists are seen in the traffic breaking the same traffic rules.

## 8. CONCLUSION

Safety is a greater challenge facing motorcyclists and their passengers. More than 90% of motorcyclists who do not use safety wear like helmets, gloves, long pints, shoes etc., and filling to observed traffic safety regulations: speed limits, approach to curves, hills and do not take proper training are at risk for accidents, injuries or death. Moreover, passengers on motorcycles are also at similar risk for injuries or death during motorcycles accidents when they fill to use safety wears or caution motorcyclists to observe traffic safety regulations when they are transported. The Ministry of Transport needs to introduce new regulations to bring discipline to transport system and to punish both motorcyclists and police violators. Enforcement of these new regulations should be in collaborations with key stakeholders in government, public and private institutions. There is a need for increase in public awareness and education especially in rural Liberia for behavior change amongst citizens in observance of traffic rules decreases their vulnerability. The vulnerability is even greater for commercial motorcyclist than their private counterparts. At a speed of 80km/h on a very deplorable and unpaved roads and riding without protective wears and failure to observe traffic rules, the situation is even more alarming. In combination with reckless driving and over speeding motorcyclist are more prone to crash injuries than e.g. car occupants. With limited involvement of the local government, a weak motorcyclist union, increase motorcyclists -self regulations, motorcycle safety and risks management in Maryland County is still a myth and not a reality.

### Acknowledgment

This research paper received funding from my wife Mrs. Mardea M. Mydeh-Davis. I wish to extend my appreciation to the following organizations and individuals who provided moral, technical, psychological support, encouragement and academic input to the success of the paper: the local police in Maryland County, senior nursing students at William V.S. Tubman University, motorcyclists, official of the motorcyclists Union and nurses at J.J. Dossen Hospital. I am thankful to the Institute for Science, Technology and Education for accepting my paper for publication.

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