International STD Research & Reviews

7(1): 1-10, 2018; Article no.ISRR.38399
ISSN: 2347-5196, NLM ID: 101666147

The Traffic Police Officers' Knowledge on HIV Prevention Measures While Handling Road Traffic Accidents Victims along Jinja- Malaba High Way in Eastern Uganda

Fiona Ayebale[1] and Joel Bazira[2*]

[1]Faculty of Health Sciences, Uganda Christian University, Bishop Road, P.O.Box 4, Mukono, Uganda.
[2]Department of Microbiology, Mbarara University of Science and Technology, P.O.Box 1410, Mbarara Uganda.

Authors' contributions

This work was carried out in collaboration between both authors. Author FA designed the study, performed the statistical analysis, wrote the protocol, wrote the first draft of the manuscript, managed the analyses of the study and managed the literature searches. All these were done in hand with author JB. Both authors read and approved the final manuscript.

Article Information

DOI: 10.9734/ISRR/2018/38399
Editor(s):
(1) Anjana Verma, Assistant Professor, Department of Community Medicine, Geetanjali Medical College, Geetanjali Medcity, India.
Reviewers:
(1) Ngo Nonga Bernadette, University of Yaounde I, Cameroon.
(2) Unyime Eshiet, University of Uyo, Nigeria.
Complete Peer review History: http://www.sciencedomain.org/review-history/23700

Original Research Article

Received 24th November 2017
Accepted 3rd February 2018
Published 19th March 2018

ABSTRACT

Background: The HIV/AIDS epidemic continues to pose significant development and public health challenges in Uganda. One of the contributors to HIV prevalence is road traffic accidents. Traffic police officers who respond to save victims need to have adequate knowledge of HIV prevention and also possess proper safety gadgets/equipment. The current study was carried out to assess traffic police officers' knowledge on HIV prevention measures while handling road traffic accident victims along Jinja-Malaba highway.
Methodology: The study design was cross sectional study; questionnaire, data abstraction form and observational checklist tools were used. Data was collected from traffic police officers' along Jinja –Malaba highway using a questionnaire and observational checklist. Data about accidents for

**Corresponding author: Email: jbazira@gmail.com;*

one year period from January 2014 to December 2014 was extracted from the accident record books at police stations using data abstraction form. Data was entered into Microsoft Excel 2010, analyzed using STATA version 12 and is presented as tables, graphs and pie charts.

Results: A very high number of road accidents were recorded to have occurred along Jinja-Malaba highway for one year period from January 2014 to December 2014.

Of the 45 officers who participated in the study, 60% had adequate knowledge on HIV transmission and 51.1% had adequate knowledge on HIV prevention measures while handling road accident victims.

Most police stations visited had gloves but they lacked other safety gadgets/equipment like Waste bins, plastic bags, masks, safety glasses, gowns, plaster, hand washing provision, soap and disinfectants.

Conclusion and Recommendations: Although officers had adequate knowledge on HIV transmission and prevention, lack of safety gadgets/equipment can immensely contribute to inadequate application of the safety precautions. Therefore, the government should equip police stations with more safety gadgets.

Keywords: Road traffic accidents; injuries; traffic police officers; knowledge; HIV prevention measures; accident victims; highway; Uganda.

1. BACKGROUND

The HIV/AIDS epidemic continues to pose significant development and public health challenges in Uganda. The epidemic has resulted in substantial morbidity and mortality with significant socio-economic ramifications. It has impacted on household, community and national socioeconomic indices, affected survival indices and impacted on the delivery of health services. HIV prevalence was estimated at 6.4% by the UHSBS 2004-2005 [1]. The data also indicated that by end of 2009, 1,192,372 people were infected with HIV [1,042,711 (87%) adults and 149,661 (13%) children]. Currently in Uganda, the HIV prevalence stands at 7.3% [2-4]. HIV transmission can take place in many forms and one of them is coming in contact with open bleeding wounds from an infected individual to an uninfected individual and this is evidenced in road accidents.

A lot of research has been done on HIV and road accidents but no research has been done or documented on the traffic police officers' knowledge on HIV prevention measures while handling road traffic accident victims.

There is not much published work on how the police personnel are at risk of infection with HIV by being exposed to infectious body fluids through occupational exposures. However, a study in the United States showed that the police are one of the largest groups of non-HCWs (non-health care workers) exposed to HIV at work [5]. Police officers not having knowledge on HIV transmission and prevention have contributed to the increased prevalence of HIV infection in Uganda since they do not follow safety measures. Knowledge is used to make judgments about risk that others may be exposed to, and then this is used as a reference point to assess personal risk.

Because there is less knowledge about HIV transmission and prevention among the police officers, this has led them not to follow safety practices while handling road traffic accident victims and therefore contributed to the increase of HIV prevalence in Uganda and the world at large. This was a strong reason why I decided to carry out this research. This would help in reduction on the HIV prevalence in Uganda by increasing knowledge amongst the police officers and improving the safety practices while handling accident victims. A study was conducted to assess the knowledge of traffic police officers on risk of transmission and prevention of HIV infection when rescuing road traffic accident victims so as to come up with sound and evidence-based policies and programs as part of HIV prevention at work place and also improve the way the police officers handle accident victims therefore reducing on the risk of HIV transmission.

2. MATERIALS AND METHODS

2.1 Study Design

This was a cross sectional study.

2.2 Study Area

The study was conducted in police stations along Jinja- Malaba highway in the districts Jinja,

Mayuge, Iganga, Bugiri, Busia and Tororo in Eastern Uganda.

2.3 Procedure for Data Collection

The study included. Primary data that was collected using a self-administered questionnaire from the traffic police officers and secondary data was from the police records using a data abstraction form. A checklist was used to find out the available safety gadgets/equipment at the police stations.

2.4 Quality Control

A pre-test of the tools to assess quality of data that was to be collected was done at Kawolo police station amongst a few police officers. This led to the editing and refining of the data collection tools before final prints were made.

2.5 Data Processing and Analysis

The data collection tools that were used are; data abstraction form, observational checklist and a questionnaire and were checked for completeness. The data that was collected was entered into Microsoft Excel 2010 and analyzed using STATA versions 12. Results are presented in form of tables, simple charts and graphs.

2.6 Ethical Considerations

The research proposal was approved by the Ethics and Research Committee of Uganda Christian University and permission was also sought from the Inspector General of police in-charge of Research, Planning and development. Written consent from the respondents before asking them to participate in the study was obtained and total privacy and confidentiality was observed during the process.

3. RESULTS

The study involved 45 traffic police officers along Jinja-Malaba highway. These included Inspectors, Assistant Inspectors, Corporals, Sergeants and Police Constables.

3.1 Socio-demographic/demographic Characteristics of Respondents

As shown in Table 1 24(53.3%) of the officers were male. The majority (53.3%), of officers were within 25-34 years of age and catholic by religion (42.2%). Although the highest level of education attained was diploma, majority of the officers had attained A level (53.3%).

In addition to the demographic characteristics of respondents, the pie chart Fig. 1 shows the ranks of respondents (traffic police officers).

3.2 Number of Road Traffic Accidents along Jinja-Malaba Highway from January 2014 to December 2014

According to Table 2 the total number of accidents was 1026. Out of 1026, 537(52.3%) were serious, 252(24.6%) were fatal while 236(23.0%) were minor.

3.3 Traffic Police Officers' Knowledge on HIV Transmission

The Table 3 shows that, out of all the officers, 100% [6] (45) knew that HIV can be transmitted through having unprotected sex, followed by coming in contact with blood when you have a wound 93.3% [7], for example when handling injured road accident victims. Others demonstrated that HIV can be transmitted through sharing sharp objects 66.7% [8] and blood transfusion 13.3%. However, only 8.9% [9] knew HIV can be transmitted from mother to child.

From Table 4, 60% [10] of the officers had adequate knowledge on HIV transmission and 40% [11] had inadequate knowledge.

Table 5 shows, out of 45 officers, 8.9% [9] had ever gotten injured/exposed while handling accident victims.

3.4 Traffic Police Officers' Knowledge on HIV Prevention Measures While Handling Road Accident Victims

As shown in Table 6 all 100% [6] officers knew putting on safety gadgets as means of HIV prevention, followed by covering wound/cuts in case you have one 93.3% [7], avoiding being cut with sharp objects for example, broken car window or glasses 66.7% [8] and separating the accident victims 66.7% [8]. However, only 11.1% [12] knew proper waste disposal and 2.2% [13]. PEP as an HIV prevention measure in case one was exposed.

3.5 Available Safety Gadgets/Equipment at the Police Stations along Jinja-Malaba Highway as Regards to HIV Prevention While Handling Road Accident Victims

Only gloves were available in all the police stations. Referral system and SOP on how to handle the victims were known but not written down. Waste bins, plastic bags, masks, safety glasses, gowns, plaster, disinfectants, hand washing provision and soap were not available in all the police stations.

Apart from Tororo and Iganga which had more than two rescue vehicles, most police stations had either one or two rescue vehicles/ambulances. These vehicles were being used for several activities let alone accidents.

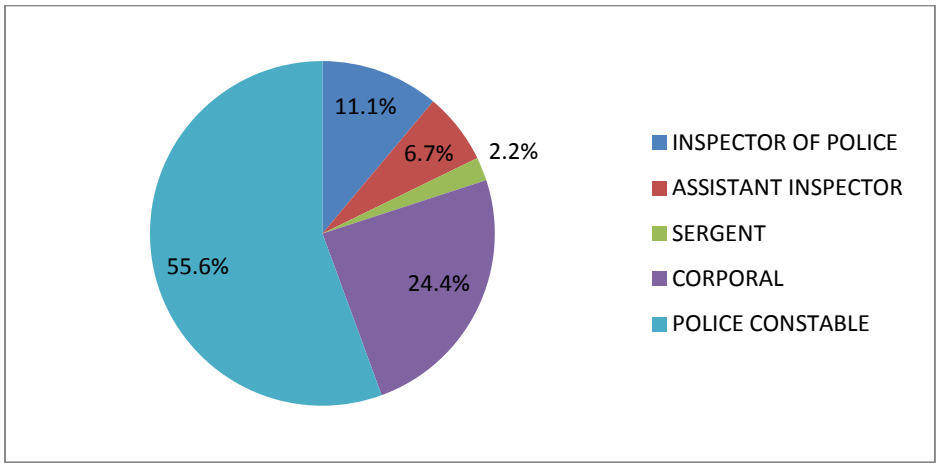

Fig. 1. A pie chart showing ranks of respondents

Table 1. Socio demographic characteristics of respondents

Characteristic	Frequency(N=45)	Percentage (%)
Sex		
MALE	24	53.3
FEMALE	21	46.7
Age		
18-24	1	2.2
25-34	24	53.3
35-44	12	26.7
45+	8	17.8
Working experience (in years)		
1-10	25	55.6
11-20	10	22.2
21-30	9	20
>30	1	2.2
Education level		
O LEVEL	13	28.9
A LEVEL	24	53.3
DIPLOMA	8	17.8
Religion		
ANGLICAN	16	35.6
CATHOLIC	19	42.2
PENTECOSTAL	6	13.3
ISLAM	3	6.7
SDA	1	2.2

Source: primary data

Table 2. Number and nature of accidents along Jinja –Malaba highway from January 2014-December 2014

	Nature of accident			
Month	**Fatal**	**Serious**	**Minor**	**Total**
JANUARY	13	26	22	61
FEBUARY	24	33	14	71
MARCH	21	65	23	109
APRIL	21	41	20	82
MAY	16	52	20	88
JUNE	18	21	14	53
JULY	21	54	17	92
AUGUST	37	64	20	121
SEPTEMBER	20	51	28	99
OCTOBER	14	51	17	82
NOVEMBER	20	40	24	84
DECECEMBER	27	39	17	83
TOTAL	252	537	236	1026

Source: Police record books (2014) of Jinja, Mayuge, Iganga, Bugiri, Busia and Tororo

Table 3. Specific knowledge on modes of HIV transmission among officers

Modes of HIV transmission	Frequency (n)	Percentage (%)
Through having unprotected sex	45	100
Contact with blood when you have a wound, for example while handling injured road accident victims	42	93.3
Sharing sharp objects	30	66.7
Blood transfusion	6	13.3
Mother to child	4	8.9

Source: primary data. Multiple responses allowed

Table 4. Level of Knowledge of Officers on HIV Transmission

Scores on HIV transmission	Frequency(n)	Percentage (%)
Adequate knowledge	27	60
Inadequate knowledge	18	40
Total	45	100

Key (Determined by the researcher)
Knows 3 or more modes of HIV transmission (out of 5) *adequate knowledge*
Knows 2 or less modes of HIV transmission (out of 5) *inadequate knowledge*

From the Table 4 above, of the 45 officers, 60% [14](27) had adequate knowledge and 40% [15](18) had inadequate knowledge.

Table 5. Officers that have ever gotten injured/exposed while handling injured road accident victims

Exposure status of officers	Frequency(n)	Percentage (%)
Gotten injured/exposed	4	8.9
Never gotten injured/exposed	41	91.1
Total	45	100

Table 6. Specific knowledge of the officers on HIV Prevention measures while handling road accident victims

Prevention measures while handling accident victims	Frequency(n)	Percentage (%)
Wearing safety gears for example gloves	45	100
Covering wound in case you have one	42	93.3
Avoiding being cut with sharp objects for example broken car window or glasses	30	66.7
Separating the accident victims	30	66.7
Proper disposal of wastes	5	11.1
PEP	1	2.2

Source: primary data. Multiple responses allowed

Table 7. Level of knowledge of officers on HIV prevention measures while handling road accident victims

Scores on HIV prevention	Frequency(n)	Percentage (%)
Adequate knowledge	23	51.1
Inadequate knowledge	22	48.9
Total	45	100

Source: primary data

Key (Determined by the researcher)
Knows 4 and more HIV prevention measures while handling accident victims (out of 6)…… adequate knowledge
Knows 3 and less HIV prevention measures while handling accident victims (out of 6)……inadequate knowledge

From the table 7 above, of the 45 officers, 51.1%[16] (23) had adequate knowledge and 48.9% [17](22) had inadequate knowledge.

4. DISCUSSION

4.1 Number of Road Traffic Accidents along Jinja -Malaba Highway from January 2014 to December 2014

In this study, it is important to highlight that a very high number of road accidents are recorded to have occurred along Jinja-Malaba highway. A total of 789 serious and fatal accidents; in which injuries were sustained were registered. Such types of accidents therefore possess a great risk of transmission of HIV from one person to another since bleeding is involved. It is therefore of public health importance to focus on the need for knowledge amongst traffic police officers on HIV prevention measures while handling road accident victims since the number of road accidents is high and will most assuredly increase each time as traffic increases on this highway and in Uganda as a whole.

The findings of this study reaffirm the findings of similar other reports and surveys carried out earlier confirming the very high rate of road accidents in Uganda. World Health Organization [18] reports that, currently road traffic injuries are the leading cause of deaths and injuries. Traffic crashes are estimated to increase by 83% in low income and middle income countries [19].

In Asia and Africa, there is an exponential increasing traffic casualty trend. In the Asia region for example China, for 2006 alone there were 431,139 injuries, where as in Chile for 2007 there were 50,010 injuries reported [19,20]. This high number of accident is similar to that reported by the World Health Organization report on road safety in 2009, where by Uganda was one of the African countries with the highest rate of road accidents as reflected also in the current study.

The current study revealed high rate of road traffic accidents. This is similar to the Uganda Police Force report that recorded a total of about 11,758 in 2008, 22,699 in 2009, 22,461 in 2010, 22,272 in 2011 and 19,861 road traffic crashes in 2012 [21]. Majority of the accidents were either serious or minor in all the years. According to the annual crime and traffic/ road safety police report 2013 18,368 crashes were reported out of which 2,616 (14.2%) were fatal, 8,874 (48.3%) were serious and 6,878 (37.5 %) were minor.

All these reports indicate that road accidents in Uganda are still high and accidents involving injuries are still the leading nature of accidents

and therefore, a great need to pay attention to HIV prevention while handling the accident victims. There is also need to enforce laws of reducing RTAs which in turn would reduce the risk of HIV transmission.

4.2 Traffic Police Officers' Knowledge on HIV Transmission

Lack of knowledge on HIV transmission is one of the contributing factors to high prevalence of HIV. Findings from this study revealed that 60% of the officers had adequate knowledge. All (100%) could identify at least one mode of HIV transmission. This may be attributed to the level of education attained by the officers as most of them (53.3%) had attained A level, 17.8% diploma and the minimum level attained was O-level (28.9%). This is because some of the information about HIV is normally given at those education levels. Adequate knowledge may also be contributed to by the media as information on HIV is broadcasted on TVs, radios, billboards among many others.

The findings in this study on HIV transmission are in agreement with studies done among the police force in Liberia [9,4] and Myanmar [15,22] where the officers had knowledge on HIV and could identify correctly at least two modes of HIV transmission. Although some officers did not know that HIV can be transmitted through road accident, majority (93.3%) were aware of it and this was not in agreement with a case study in Bugoma road accident scene in Kenya where the majority of the officers (59.5%) were not aware that HIV can be transmitted through road accidents [3].

4.3 Traffic Police Officers' Knowledge on HIV Prevention Measures While Handling Road Accident Victims

Police officers are at risk for exposure to needle sticks, blood splashes and human bites because they are routinely asked to act in emergency situations, during which there may not be time to take adequate precautions [23]. In the developed world, studies in the United States have shown that the incidence of occupational exposure to blood or body fluids among public safety workers (police personnel inclusive) is higher than among the general public - as high as 64% [4,23]. These studies have suggested that occupational exposure is often under-reported in the police, though recent reviews of the literature from several countries suggest that this may no longer be the case [4,23].

Lack of knowledge on HIV prevention measures while handling road accident victims is one of the contributing factors to the high prevalence of HIV. Possible solutions for handling the issue of police officer's exposure to communicable disease are primarily precautionary.

This study revealed that most (51.1%) of the officers had adequate knowledge on the HIV prevention measures while handling road accident victims. This high level of Knowledge on HIV prevention measures may be explained by the fact that the officers had attained at least O level (28.9%) and the bigger number (53.3%) had attained A level and diploma (17.8%) and information about HIV is always given at those education levels. Knowledge on HIV prevention measures while handling road accident victims may also be contributed to by experience since none of the officers was below one year in the field. It is presumed that as they stayed in the field and handled the road accident victims, they had learnt some of the ways of handling the victims safely contributing to their knowledge on HIV prevention measures while handling the victims.

Despite their difference in duration of years in the field, generally officers had adequate knowledge on HIV transmission and HIV prevention. This may be contributed to by the media as information on HIV is broadcasted almost everywhere every time like on TVs, radios, billboards among many others.

Of the HIV prevention measures which were known, only 11.1% knew proper disposal of wastes and 2.2% knew PEP. Most of the officers said, after handling the victims, the wastes are thrown either in the bush or left on the scene. This can lead to transfer of infections to the community. The biggest percentage did not know about PEP to the extent that one thought it was a liquid which is injected in the body to help prevent HIV infection. This finding is slightly different from a case study in Bungoma, Kenya that showed that 18% of the officers had knowledge on PEP. This difference may be because the officers in Kenya are more sensitized on PEP than those in Uganda. PEP is an important HIV prevention measure which can help in case an exposure has happened.

One of the solutions for police officers dealing with the risk of acquiring an infectious disease is education and training regarding these diseases and how to handle civilians and offenders who have these diseases [23,24]. This current study revealed that only 35.6% of officers had received basic HIV training either through their own initiative or training organized at work. According to a survey carried out among peace keepers in Liberia, there were wide disparities, ranging from 56% to 100% in reported levels of Pre-deployment HIV/AIDS training among Police officers. Of those that had been deployed in Liberia and Kenya, 88% [9] and 67.6% [3] had received training respectively.

This study further found out that most officers (88.9%) reported the need to attend training on HIV including those who had never received any training (57.8%) and some who had ever received (31.1%) the training. This was in agreement with a similar study in Bungoma, Kenya in which 81% of the officers reported the need to attend HIV training, as one important avenue of increasing their knowledge and skills on road accident victim handling [3].

The way traffic police officers handle themselves and the accident victims on the accident scenes with regards to HIV greatly depends on the their knowledge and skills. This therefore means that if officers are not trained, safety precautions may not be followed due to ignorance.

4.4 Available Safety Gadgets/Equipment at the Police Stations along Jinja-Malaba Highway As Regards to HIV Prevention While Handling Road Accident Victims

Findings from this study revealed that gloves were the only safety gadget available in all the police stations. Referral system and SOP on how to handle the accident victims were known but not written down.

In general, waste bins, plastic bags, masks, safety glasses, gowns, plaster, disinfectant, hand washing provision, soap were not available in all the police stations.

Plasters were not available at any of the police stations. This could mean that police officers do not normally cover their wound/cuts before handling the victims. This is risky as officers may get exposed to HIV infected blood. Many officers reported that they normally went on to handle victims even without their own cuts/wounds being covered with plasters.

Masks, safety glasses and gowns not being available was an indicator that officers do not wear safety gears while handling the victims and this exposes them to direct blood splashes.

Waste bins and plastic bags not being available shows that wastes are not properly disposed or managed, hence safety not practiced. Many participants reported that the wastes were often thrown in the bush or left at the accident scenes. This was observed as a dangerous practice as it predisposes the officers and the public to infection. Broken glasses were reported to be left on the roads and are stepped on by the moving vehicles, let alone the passersby who if cut can get infected.

Hand washing with soap has been documented as the most single effective way of preventing infections [12]. This practice would help in minimizing infections in case one touched blood. This research found out that there were no provisions for hand washing and soap. It is therefore argued that officers have a great predisposition to HIV infection if this safety precaution is not adhered to.

The study further documented the lack of disinfectants. Disinfectants are important for killing organisms. Disinfectants should be poured on the infected areas and materials to kill the organism especially car body parts on which the victims are transported to hospitals. It is also recommended that such material must be disinfected before they are used on another victim. Many officers reported that rescue materials and car body parts were often not disinfected before the rescue of other victims especially in accidents which involved many people.

Each police station had a rescue vehicle/ambulance. However the number of rescue vehicles was small compared to the area of coverage, the number of accidents received per day and the number of activities the vehicles were used for since they are not used for accidents only. Because of the vehicles being few, many officers reported that however many the victims may be at an accident scene, they are all just bundled/packed in the vehicles without separating them despite the injuries and bleeding. This is a wrong safety practice which exposes these victims to HIV infection.

It should therefore be noted that the application of the knowledge and skills on a given subject is enhanced by having the required gadgets/equipment. For officers to follow the right procedures or take the necessary and right precautions these too have to be addressed as the officers may have knowledge on HIV transmission and prevention but may be limited by availability of the safety gadgets/ equipment. As it was reported that the participants in this study had adequate knowledge on HIV transmission and prevention measures, the availability of the safety gadgets/ equipment, would enhance application of the right safety practices while handling road accident victims.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The numbers of road traffic accidents along Jinja - Malaba highway are still high.

Majority of the traffic police officers had adequate knowledge on HIV transmission and HIV prevention measures while handling road accident victims.

Most police stations had inadequate safety gadgets/equipment which may be a contributor to inadequate application of the safety precautions by the officers. This is worsened by their following orders at their work, that even at their own risk; they will work without the necessary safety gadgets hence a high risk of exposure to HIV infection.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. STD/AIDS Control Programme, Ministry of Health. The status of the HIV/AIDS epidemic in Uganda. The HIV/AIDS Epidemiological Surveillance Report. 2010;3-6.
2. Uganda AIDS Indicator Survey; 2011.
3. Atema EM. Traffic police officers' knowledge on HIV prevention. A case study of Bungoma accident scene in Kenya. The 28th UMLTA & 5th FEAMLS Scientific Conference Abstract Book. 2010;25.
4. Averhoff FM, et al. Occupational exposures and risk of hepatitis B virus infection among public safety workers. Journal of Occupational and Environmental Medicine. 2002;44(6):591-596.
5. Merchant RC, et al. Emergency department blood and body fluid exposure evaluations and HIV post exposure prophylaxis usage. ACAD EMERG MED. 2003;10(12).
6. Sümer N. Personality and behavioral predictors of traffic accidents: Testing a contextual mediated model. Accident Analysis & Prevention. 2003;35:949–964.
7. Rischitelli G, et al. The risk of acquiring hepatitis B or C among public safety workers: A systematic review. American Journal of Preventive Medicine. 2001;20(4):299-306.
8. Parker D, Lajunen T, Stradling S. Attitudinal predictors of interpersonally aggressive violations on the road. Transport Research Part F: Traffic Psychology and Behaviour. 1998;1(10): 11-24.
9. Bazergan R. HIV/AIDS knowledge, attitude and practice survey: UN uniformed peacekeepers in Liberia. United Nations Peace Keeping in the Service of Peace. 2006;3-26.
10. Özkan T, Lajunen T, Summala H. Driver behaviour questionnaire: A follow-up study. Accident Analysis & Prevention. 2006;38(2):386-395.
11. Mock C, Amegashie J, Darteh K. Role of commercial drivers in motor vehicle related injuries in Ghana. Injury Prevention. 1999;5:268-271.
12. Merchant RC, et al. Emergency department blood and body fluid exposure evaluations and HIV post exposure prophylaxis usage. ACAD EMERG MED. 2003;10(12).
13. HIV Prevalence, Uganda. Available:aidsinfo.unaids.org
14. Ozkan T, Lajunen T. What causes the differences in driving between young men and women? The effects of gender roles and sex on young drivers' driving behavior and self-assessment of skills. Transportation Research Part F. 2006;9: 269–277.
15. Morse JM. Confusing categories and themes. Qualitative Health Research. 2008;18(6):727-728.
16. Normal behavior and traffic safety: Violations, errors, lapses and crashes. In

Proceedings of the 4th Annual Conference on Transportation, Traffic Safety and Health, Tokyo, Japan, 21-22 October; 1998.
17. National Road Safety Commission Reports on Road Crashes. National Transport Policy- Ghana; 2009. (Retrieved September, 15, 2010) Available:http://www.nrsc.gov.gh/statistics/statistics.htm
18. World Health Organization. A 5-year health organisation strategy for road traffic injury prevention. Geneva Switzerland; 2001.
19. World Health Organization. World report on road traffic injury prevention: Summary; 2004.
20. World Health Organization. Global status report on road safety, vii and 45-227; 2009.
21. Uganda Bureau of Statistics (UBOS). Statistical Abstract. 2013;34-35.
22. UNODC. HIV/AIDS Prevention for Police Force in Myanmar. CARE International, 4-6; 2005.
23. Pagane J, et al. New York City police officers incidence of transcutaneous exposures. Occupational Medicine (London). 1996;46(4):285-288.
24. Flavin, Jeanne. Police and HIV/AIDS: The risk, the reality, the response. American Journal of Criminal Justice. 1998;23(1):33-58.

Peer-review history:
The peer review history for this paper can be accessed here:
http://www.sciencedomain.org/review-history/23700