ABSTRACT

Background: One of the most demanding problems in emergency care of road traffic accident victim is the acceptance of financial liability. Aim: This research reported the application of alternative dispute resolution rather than the conventional approach of police intervention and investigation in ensuring speedy emergency care for road traffic accident victim in a Nigeria tertiary hospital. Methods: This cross-sectional study was conducted among road traffic accident victims in the emergency unit of a tertiary hospital in Southern Nigeria. Eligibility for inclusion was lack of consensus among the parties in accepting financial responsibility for the emergency care in the hospital. Results: The intervention of the research resulted in 190 beneficiaries within a period of two years. The majority of the participants were between 16 to 30 years old (52.1%), males (72.1%) and commercial vehicle passengers (43.7%). About half of the participants accessed more than or equal to 100USD (using an exchange rate of 1USD to 160NGN) mainly for investigation, medication and admission based on intervention. About four-fifths (83.2%) of the cases were satisfactorily resolved by this alternative conflict resolutions while it failed in resolving 16.8% of the cases. Private vehicle passengers (29.4%) constituted majority of the unresolved cases followed by commercial vehicle passengers (20.5%), pedestrians (14.3%) and auto-bike riders (12.5%). Conclusion: Data from this study revealed that when lack of consensus among the parties in accepting financial responsibility for the trauma (RTA) care especially at acute phase of hospitalization, the alternative conflict resolutions is a sure answer.

Key words: Road traffic accident, alternative dispute resolution, litigation, medical ethics, National Health Insurance Scheme, conflict resolution
INTRODUCTION

Injuries have been recognized as a neglected pandemic because they kill many people annually around the world just like tuberculosis, malaria and HIV/AIDS. It has been reported that 25% of the five million injury-related deaths are associated with road traffic accidents.\(^1\) For each of the mortality, it is estimated that there are about 50 survivors with some form of significant permanent disability.\(^1\)

Road traffic injuries (RTIs) are a major cause of global disease burden. In 2002, it was estimated that over one million people died and 20-50 million people were injured due road traffic crashes.\(^2\) It has been projected that RTIs would become the 3rd major contributor to disease burden globally by 2020.\(^3\) A huge percentage of the projected rise in RTIs will be experienced in low- and middle-income regions of the world.\(^2-4\)

This is due to the rapid rise in automobiles and exposure to contributing factors such as speed and alcohol, and exacerbated by inadequate enforcement of traffic safety regulations and public health infrastructure.\(^2-4\)

Between 1968 and 1990s, the number of mortalities in most African countries resulting from road crashes rose by over 350 percent.\(^5,6\) The highest rise was observed in East African countries.\(^5,6\) "In contrast to this, in developed countries, such as Western Europe, North America, Japan, Australia, and New Zealand, road fatalities declined over this period by over 20 percent",\(^7\) Africa with 4 percent of the world vehicles accounts for 10 percent of road mortalities while the developed countries with 60 percent account for 14 road mortalities.\(^8\) "The rates of road accident fatalities per 10,000 vehicles which is a frequently used index of a country's road traffic risk are also significantly higher in African countries than in high-income nations, sometimes by a factor of 30-60".\(^9,10\) "Ethiopia, Kenya, and Uganda have the highest rates that are in excess of 60 per 10,000 registered vehicles".\(^9,10\)

RTI accounts for an immense economic cost. "RTIs are estimated to be 1% of Gross National Product (GNP) in low income countries, 1.5% in middle-income countries and 2% in high-income countries. Road Traffic Injuries place a heavy burden not only on global and international economies but also on household finances".\(^9,11\) Road crash is a cause of poverty as some breadwinners are lost while others are lost disabled due to road crashes, associated with the burden of caring for members disabled by road traffic injuries. The financial burden of RTA at all level is most manifested at the acute phase of hospitalization of the victim with noticeable reluctance or outright denial of financial commitment of the various stakeholders extending from the supposed culprit drivers or management of Transport Company and even immediate biological families of the parties involved.

The standard method in Nigeria is that all accident cases must be reported to the Police for proper investigation and possibly judicial intervention to ensure justice is served to all parties. While this procedure is considered the law, the reality is that the victim in question bears the full burden of medical cost from the beginning to the end, either alone or with assistant from the family members. The usual arrest of the offending drivers, followed with detention that might lead to payment of bail does not in any way offer immediate succour to the patient health. Cost benefit as at this time accrue to the police based on bail or to the lawyers if the matters progress to the judiciary for any form of litigation. The budget that would have alleviated the painful plight of the victim subjected to all forms of hospital interrogation is diverted to bail or litigation. The insurance company at best will report several days after the accident if ever they do report at all. The matter is made worst if the transport system is corporate one or owed by wealthy individuals. The life of the patient is thus unknowingly ranked secondary to other administrative issues.

The survival of accident victim with favourable outcome is usually dependent on timing and comprehensive nature of the emergency care. The golden hour which involves pre-hospital care and acute phase of hospitalization are the most apprehensive and critical period for the victims involved in deciding survivability especially in a serious situation. This emergency care is usually delayed and haphazardly
rendered mainly due accessibility and financial barriers. The financial barrier is rooted on predominantly hospital bill settlement as out of pocket expenses and the optional nature of National Health Insurance Scheme (NHIS).\textsuperscript{11,12} The preference of third party insurance to comprehensive insurance due the dominance of second hand vehicle on Nigerian roads worsen the fund availability for emergency care in cases of road accident/crash. The non-functional insurances policies or out-right fraudulent connivance by the transport owners and the management of the insurance company with intent to criminally maximize profit at the expense of the party involved in RTA contributes significantly to delayed emergency trauma care in Nigeria.

Several challenges are often encountered in hospital settings that hamper emergency care of road traffic accident victim in Nigeria and they include request for police report, request for initial deposit and non-availability of immediate biological family to stand for the victim. The consequences of these lapses in such condition include immediate denying of treatment for acute trauma patients, frequent cases of abandonment in the hospital at the detriment of the victim, reduction of available beds to other in-coming patients even when they can pay, delay or even denial of new patients admission due to lack of bed spaces, loss of revenue for the hospital in question based on above scenario, higher hospital bills for the patients due to prolonged hospitalization and failure of justice for the involved victims. Creation and sustenance of vicious cycle based on the fact that the culprit is not liable for acts of endangerment and allowed to commit same accident over and over again due to lack of deterrence.

Alternative dispute resolution (ADR) is dynamic and includes many hybrid processes namely mediation, conciliation, and arbitration which makes it, easily adaptable to disputes and conflict situations.\textsuperscript{12,20,27} ADR is thus translated to mean "find some way to facilitate a resolution of the matter without litigating; however, you may decide to do so".\textsuperscript{11} Over the last forty years, ADR has developed extensively and become an integral part of the mainstream dispute resolution system in many countries, even beyond the expectations at its initial introduction globally.\textsuperscript{11} This is evidenced by the fact that the use of ADR is supported by the courts, government departments, and by an increasingly wide variety of professionals, both legal and non-legal professionals trained in the use of ADR.\textsuperscript{11} The judicial powers for the resolution of disputes are vest in the courts under the Constitution of the Federal Republic of Nigeria 1999.\textsuperscript{12} However, the increasing practice in favour of the use of ADR is not unconnected to the problems of delays and the cost of litigation.

ADR is expected to be cost effective in minimizing distractions, preventing the prolonged delay in emergency care and enhance survivability. This is against the backdrop that customary arbitration has been applied for the resolution of disputes in various indigenous communities in Nigeria before the introduction of the modern practice of arbitration based on statutes and international laws. Customary arbitration has been defined as "an arbitration in dispute founded on the voluntary submission of the parties to the decision of the arbitrators who are either the chiefs or elders of their community, and the agreement".\textsuperscript{11} This research reported the application of alternative dispute resolution rather than the conventional approach of police intervention and investigation in ensuring speedy emergency care for root traffic accident victim in a Nigeria tertiary hospital.

**METHODOLOGY**

**Study design/setting**

This cross-sectional study was conducted among road traffic accident victims in the emergency unit of University of Benin Teaching Hospital, Benin City, a tertiary hospital in Southern Nigeria. The rationale for selecting UBTH was based on its location as the main tertiary hospital in the South-South zone and the first designated hospital of Save Accident Victim Association of Nigeria (SAVAN) an NGO that stand for accident victim’s in the absence of their biological relations.

**Study population**

Road traffic accident victims in the emergency unit of the University of Benin Teaching,
Hospital, Benin City, Nigeria were used for the study.

**Sampling/Sample size calculation**
Consecutive non-probability sampling technique was used to recruit 190 participants which exceeded the minimum sample size of 131 calculated using Cochran’s formula for epidemiological studies.\(^{13}\)

\[ n = \frac{z^2 \times p(1-p)}{d^2} \]

where \( n \) = sample size, \( z \) = z statistics for a level of confidence (set at 1.96 corresponding to 95.0% confidence level), \( p \) = prevalence = 90.6% (0.906)\(^{14}\), \( q \) = 1-\( p \) and \( d \) = degree of accuracy desired (error margin) = 5% (0.05).

**Inclusion criteria**
The eligibility for inclusion were road traffic accident victim reporting to the hospital without biological relatives, anticipated fear of arrest or litigation cost from both parties, evidence of attempt on the part of the culprits to evade responsibility, and lack of consensus among the parties in accepting financial responsibility for the emergency care in the hospital and agreement for SAVAN to intervene.

**Exclusion criteria**
The exclusion criteria were immediate police intervention, compassion extended from the victim to the culprit based on trust, lack of interest in seeking any compensation and the refusal of SAVAN intervention even when there was lack of consensus among the parties in accepting financial responsibility for the emergency care in the hospital.

**Protocol**
This pilot project was initiated by Save Accident Victims Association of Nigeria (SAVAN), a non-for-profit organization based years of experience in accident victim’s plight of abandonment, lack of advocacy, increased vulnerability to the system manifested by the lack of sincerity or passion of transport company owners to assist the victims with hospital bills. On arrival of parties-the victim(s) and the supposed culprit at the Emergency Unit of University of Benin Teaching Hospital, they are informed of the Alternate Dispute Resolution model of SAVAN which implicated vehicles would be parked in the hospital’s premises with the keys in SAVAN custody until the patient fully recovers with financial support from the supposed culprit. Once the parties agree the SAVAN officer secure the keys, incident the accident case in the form and notebook. With this method the case note, medication, investigation and other hospital expenses is settled by the culprit based on mutual agreement varying from case to case. The other alternate is the crashed vehicle that caused the accident would be towed to the police with likelihood of bail or sleeping the cell for 24-48 hours or face litigation by the suspected culprit. Figure 1 depicted the trajectory of the intervention.

**Data collection tool**
A self-developed validated questionnaire was used to elicit the information of interest from victim/relative. This anonymous questionnaire with no identifier was to collect information on age, gender, type of vehicle and characteristics of the road users. Other information on advocacy, financial commitment and what it covered and effectiveness of the intervention as a future deterrent were obtained subsequently.

**Ethical consideration**
The protocol for this study was reviewed and approved by Research Team of Save Accident Victims of Nigeria (SAVAN), a registered non-governmental organization in line its Research Ethics. Necessary permission was obtained from the co-ordinator of the emergency unit of University of Benin Teaching Hospital, Benin City, Nigeria. Informed consent was obtained from the participants. Participation in this study was voluntary and non-participation did not adversely affect the received care in the emergency unit. The ethical committee of SAVAN approved this research. There was insignificant attrition of the beneficiaries to the tune of three that were not included. There was a pilot study with the questionnaire before the real survey. The pilot study was domiciled at UBTH with about ten beneficiaries.

**Data analysis**
The data was subjected to descriptive statistics in form of frequency, cross-tabulation and percentages using IBM SPSS for window version 21.0. Test of association was done using Chi square statistics and statistical significance was set at \( p < 0.05 \).
Figure 1: Trajectory of the intervention

1. Mediation Initiated after triage in hospital

2. Accused driver’s vehicle impounded based on consent from all parties involved

3. Documentation of information’s

4. Accused culprit begins money deposit for

   - Sufficient Deposit
   - Insufficient Deposit
   - Treatment Progresses based on mutual consent
   - Delayed Treatment or partial with emergency’s consumables

5. Patient discharged after consultative mediation briefing by SAVAN
Table 1: Pattern of road users involved in accident and outcome of alternative dispute resolution among them

<table>
<thead>
<tr>
<th>Road users</th>
<th>Positively resolved Status</th>
<th>Unresolved status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n (%)</td>
<td>n (%)</td>
</tr>
<tr>
<td><strong>Commercial Vehicle’s Passengers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>48 (30.4)</td>
<td>12 (37.5)</td>
</tr>
<tr>
<td>Females</td>
<td>18 (11.4)</td>
<td>5 (15.6)</td>
</tr>
<tr>
<td><strong>Private Vehicles Passengers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>7 (4.4)</td>
<td>3 (9.4)</td>
</tr>
<tr>
<td>Females</td>
<td>5 (3.2)</td>
<td>2 (6.3)</td>
</tr>
<tr>
<td><strong>Pedestrians</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>29 (18.4)</td>
<td>5 (15.6)</td>
</tr>
<tr>
<td>Females</td>
<td>13 (8.2)</td>
<td>2 (6.3)</td>
</tr>
<tr>
<td><strong>Vehicle Drivers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>2 (1.2)</td>
<td>--</td>
</tr>
<tr>
<td>Females</td>
<td>3 (1.9)</td>
<td>--</td>
</tr>
<tr>
<td><strong>Auto-bike riders</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>16 (10.1)</td>
<td>2 (6.3)</td>
</tr>
<tr>
<td>Females</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td><strong>Others</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>12 (7.6)</td>
<td>1 (3.1)</td>
</tr>
<tr>
<td>Females</td>
<td>5 (3.2)</td>
<td>--</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>158 (100.0)</td>
<td>32 (100.0)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>Males</td>
<td>137 (72.1)</td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td>53 (27.9)</td>
</tr>
</tbody>
</table>
Figure 2: Profile of financial compensation for the participants

Figure 3: Types/level of benefits among the participants
RESULTS

More than half (52.1%) and one-fifth (21.6%) of the participants were 16-30 and 0-15 years old respectively. The rest in descending order are 12.1% for 31-46 years, 8.9% for the 47-62 years and 5.3% for more than 62 years. Males constituted 72.1% of the participants while 27.9% of the remainder was females. The majority of the beneficiaries were passengers (52.6%) [commercial vehicle passenger (43.7%) private vehicle passenger (8.9%)] (table 1). About four-fifths (83.2%) of the cases were satisfactorily resolved by this alternative conflict resolutions while it failed in resolving 16.8% of the cases. Private vehicle passengers (29.4%) constituted majority of the unresolved cases followed by commercial vehicle passengers (20.5%), pedestrians (14.3%) and auto-bike riders (12.5%) (table 1).
Figure 2 depicted the financial commitments of the accused culprit during hospitalization of the victim with the ADR intervention. A total of 17.4% and 7.9% of the participants received 1,000-5,000 naira and >50000 naira, respectively, from SAVAN. Even with the ADR, some victim (13.7%) never got any money or benefit (figure 2). The result shows that 65.3% of the participants benefitted in cash to settle their investigations, medication, and admission bills (figure 3), while those that benefitted from media advocacy to locate their biological families are 32.1%. The number of participants that considered the intervention as strongly effective was 62.1% (figure 5).

DISCUSSION

This pilot study with set objective to examine the application of alternative dispute resolutions rather than the conventional approach of police intervention and investigation in cases of RTA victims in Nigeria tertiary hospital had a total of 190 varying categories of road users as the participants over a period of 2 years in this research. The burden of road traffic accident in which the responsibility of the emergency care was initially unresolved and possibly impairing the positive effect of urgent intervention on treatment outcome, was higher among younger individuals (<30 years) in this study. This finding may explain why the younger ones form the higher proportion of road accident fatalities in the developing world than in industrialized nations. The age-profile of the participants revealed that road traffic accident have impact on Gross National Product (GNP) and working years lost as more than half of the participants were 16-30 years old. Hence age-related data is considered important in calculating the economic costs of road accidents as the financially disadvantaged families are the hardest hit by both direct and indirect medical costs resulting from these injuries. The predominance of people between 16 to 30 years old exerts a heavy adverse toll on those entering their most productive age thereby perpetuating poverty.

The gender of the beneficiary of the alternative dispute resolutions demonstrated the long held view that men are more actively ambulatory with passion for economic activities. This ambulatory nature and the holding unto the belief of being right of masculine figures even when out rightly wrong in patristical society like Nigeria may have explained their more involvement in road traffic accident and their difficulty in arriving at a compromise before the intervention of this study.

The study revealed commercial passengers as the dominant road user beneficiary of this intervention which may not be unconnected with the fact that buses are the most means of passenger transportation. The passenger capacity of buses is usually 10-18 seats thereby increasing the population that will be affected at an event. Additionally, the population, the payment for the trip and unfavourable attitude of the drivers to correction may explain the difficulty in arriving at a decision of care that necessitated the intervention of this study.

In developing countries, RTIs results in a significant financial burden even at the national level. "It is estimated to cost low- and middle-income countries between 1–2% of their gross national product which is well over USD 100 billion per annum." This research presented an innovative mediation approach to complement the efforts of the hospital with intent to secure easy access for hospital intervention for victims of RTA and also compelled the assumed culprit to accept financial responsibility for the victim. The primary focus was to prioritize the management of the patients with the life or survival of the victim as first on the agenda and other administrative, investigative and legislation issues as secondary. As at the time of this research, the only known intervention to assist accident victims based on cost, are either the insurance companies or good Samaritans involved in rescuing the victims. These approaches are uncoordinated and very limited. The cost benefit remains the major fulcrum of this mediation and this was reflected in the percentage of those victims that actually benefitted from immediate medical treatment that amounted to 86.3%. Specifically, about half of the participants assessed more than or equal to 100USD mainly for investigation, medication and admission based on mediation. The high level of victims benefit was achieved not because most of the accused drivers or culprits agreed that they were guilty but for the popular slogan of SAVAN that goes as thus—"even if you
are right, would you rather care for the victim with your money or use the money for bail in police detention or investigation, litigation and other administrative procedures that can be prolonged infinitely? The emphasis on the monetary payment is related to setting a mechanism to mitigate against the huge financial liability often associated with RTA related trauma as majority of road traffic accident involve individuals of lower socioeconomic backgrounds. The smaller group that did not benefit is insistent on following the full weight of the law or claimed not to have money to pay the medical bill of the patients.

The utilization of this mediation in an expanded way in Nigeria could have a significant positive impact for the victims and will go a long way to act as deterrence to reduce RTA. Several of our research findings on this mediation project validate previous publication on road traffic accident globally. According to the report by WHO on road safety in 2013, only 28 countries, representing 416 million people (7% of the world’s population), have adequate laws that address all five risk factors (speed, drunk driving, helmets, seat-belts and child restraints).[16] It is important that stakeholders design an innovative methods to address this challenge.[17]

Apart from medical cost beneficiary, advocacy or publicity was also part of the intervention since a reasonable numbers were either not identified or had identity as at the time of hospital intervention. The majority did not get any form of media exposures, while the others got various degree of exposure such as television news or announcement or radio or newspapers publications. To justify the cost incurred by the victims the project also evaluated the hospital benefits provided and found that those that had hospital admission with medications and investigation were the highest while those denied hospital admission were low (13.7%) even though they were brought to the hospital for treatment. Reasons for this denial was lack of consensus on modality for assistant or insisted that the hospitals bills will be too high or demands that they should be referred to smaller cheaper hospitals or even tradomedical homes.

The project also assessed level of deterrence on the accused culprits and found that majority of those involved in the mediation to the tune of 62.1% strongly believe the mediation will serve as a better deterrent than police intervention where the drivers or supposed culprit will stay behind bars and later be released on bail without even visiting the hospital to care for the victims in questions. Our findings is in consonance with recent work of our healthcare system that have identified that unanticipated outcomes occur at a high rate, some of which are preventable and due to medical errors.[18] When adverse events happen, patients and their families are often devastated and confused. The high rate of positive participation with satisfaction of our alternative dispute resolution confirms that after an unanticipated outcome, patients want to engage in open and honest communication with their physicians or other stakeholders as documented in previous studies.[18,19] They want “basic information about the event; assurances that they won’t suffer financially because of it; an apology; and prevention of similar events or errors in the future”. [18,20,21]

The intervention is the reality of exposing all parties to the burden of hospital admissions such as bureaucracy, treatment cost and general attributes of hospital care. The major challenges and limitation of this mediation research are causes for further research considerations and these are, death of the victims during mediation, intimidation by the major transport group or the affluent that feel they can get away with anything.

CONCLUSION

In conclusion, there are numerous advantages of alternative dispute resolution. It is far cheaper than utilization of litigation to get redress from such trauma, where several visits to the court with attendance legal fees would have delayed actual settlement of medical bills. Alternative dispute resolution creates greater opportunities for long lasting sustained friend-ships between the stakeholders involved compared to court cases. Time, energy and financial resources are much more focused on the patient in the hospital with fewer distractions of litigations that could be prolonged. Application to clinical practice; Alternative dispute resolution enhances the speedy recovery of the patient thus improving the efficiency of clinical practice, since all the
cascades of events such as opening cases file, laboratory investigations, imaging investigation, access to the pharmacy for medications, access to the theatre and even accommodation of the patients takes precedents over every other expected distractions like court cases. Lack of money at any stage of hospitalization will certainly delay immediate provision of several clinical benefits and thus compound the trauma of the patient in question. Clinical practice that is based on distractions will certainly not be of benefit to the patient.

**RECOMMENDATIONS**

Mediation or arbitration should be properly structured with curriculum to run side by side with court cases but as a secondary option for those who are willing to use it. Credible individuals of various disciplines and background can be trained to implement such program. Several hospitals and other relevant institution should have a mediation or alternative resolution unit or as an appendage of social welfare of the center. There should be periodic evaluation of such project to assess its validity or societal benefits.

**REFERENCES**

18. Liebman C.B and Hyman C. A mediation skills model to manage disclosure of errors and adverse events to patients. Health Affairs 2004;23:22-32.
20. Hickson GB, Clayton ED, Githens PB Sloan FA. Factors that prompted families to file


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