

Facial Injuries In Assault Victims In A Growing City In A Developing Country

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Abstract

Assault causes significant morbidity and mortality the world over. The face is important for both identification and assessment of beauty. Facial injuries from assault are poorly reported in literature especially in developing countries like Nigeria. The aim of this study is to analyse the characteristics of assault-related facial injuries in our environment. This was a prospective study involving the use of interviewer-administered objective structured questionnaire to obtain relevant information from patients attending the Forensic unit of ESUT Teaching Hospital Enugu. A total of 106 patients presented with assault-related facial injuries between March 2012 and February 2013. Male to female ratio was 1.1:1. The age range was 19 months - 68 years; mean age was 33.6 years and modal age range of 21 – 30 years (N = 49; 46.2%). Most injuries occurred at home (N = 51; 48.1%) followed by work/business place (N = 30; 28.3%). There were 2 cases (1.9%) of intimate partner violence. A total of 141 injuries (133.1%) were recorded with 29 patients (27.4%) presenting with multiple injuries. Soft tissue injuries constituted 132 injuries (124.5%) while hard tissue injuries were 9 (8.5%). Laceration and incision (N = 75; 70.8%) constituted the most common soft tissue injuries followed by contusion (N = 48; 45.3%) while dentoalveolar fracture (N = 9; 8.5%) was the only encountered hard tissue injury. The face is a common target during assault and people mostly affected are in the active stages of life.

Keywords: Facial injuries, Assault victims, Growing city

INTRODUCTION

Assault is increasingly becoming a global public health concern. The WHO recommends that provision of health care for victims of violence should be made a priority (WHO, 1996). No individual or part of the body including the face may be spared from assault.

The face being the most exposed part of the human body is easily accessible when an individual is exposed to any form of physical trauma (Ugboko et al, 1998; Fasola et al, 2003). Facial injuries from various causes constitute quite a significant proportion of the workload of the oral and maxillofacial surgeons in Nigeria (Fasola et al, 2003; Ajagbe et al, 1977; Fasola et al, 2001; Oji, 1996). Road traffic crashes (RTC), assaults, sports, falls, work-related accidents (Ugboko et al, 1998; Fasola et al, 2003; Adeyemo et al, 2005; Sastry et al, 1995) and animal attacks (Ugboko et al, 2002) are documented causes. Assault is replacing road traffic accident as the leading cause of facial injuries in developed countries (Sastry et al, 1995; Ugboko et al, 2002; Magennis et al, 1998; van Hoof et al, 1977). Adeyemo et al (2005) reported similar pattern in Nigeria following

literature review. However, according to some authors, road accident is still the commonest cause of facial injuries in developing countries including Nigeria (Cheema and Amin, 2006; Khalil and Shaladi, 1981; Adebayo et al, 2003).

Though interpersonal violence (assault) is increasing worldwide, assault-related facial injuries are thought to be under-reported in literature (Olasoji, 1999). Available reports are mostly from foreign literature (Afzeilus and Rosen, 1980) though there have been some reports from Nigeria (Ugboko et al, 1998; Fasola et al, 2003, Olasoji, 1999). To the best of our knowledge, this is the first study in the South Eastern part of the country where we are working.

The objective of this study is to analyse the characteristics of assault-related facial injuries in our environment and thereby call attention to this growing public health problem.

MATERIALS AND METHODS

This is a prospective study which involved the use of interviewer-administered objective structured questionnaire. The study population

Enugu State University Teaching Hospital, Enugu for assault from March 2012 to February 2013. The hospital is located in the heart of the capital city and the unit dedicated to the care of victims of assault whose cases are reported to the police. Each of such patients usually presented an extract from the police to the clinic Enugu is situated in the South Eastern Region of Nigeria and is the traditional capital of Igboland making it a prime choice for most people seeking city life in the region. The 2006 national census puts the city's population at 722, 664 people. it has a number of moderately sized open markets and tertiary institutions.

The data collected from patients include sociodemographic information, place of assault, type and site of injury. Others include type of weapons used and care received by patients. Each of such patients usually presented an extract from the police to the clinic. Patients who did not have facial injuries were excluded from the study.

Data was analyzed using simple statistical methods.

RESULTS

During the study period, 1,928 patients were seen in the Forensic unit for various complaints most of which is physical assault. Out of this, 233 (12.1%) had clinical injuries resulting from alleged assault. Of those injured, 106 patients (45.5%) had injuries involving the face either alone (N = 85; 36.5%) or in conjunction with other parts (N = 21; 9.0%).

Table I shows age and sex incidence facial

injuries. Of the 106 patients, 54 were males and 52 females giving an overall male to female ratio (M: F) is 1.1: 1. The age range of victims was 19 months - 68 years (mean: 31.3 years). The mean age for male and female was 32.1 years and 30.5 years respectively. The modal range was 21 – 30 years (N = 49; 46.2%) followed by the 31 – 40 year range (N = 25; 23.6%). There were 10 patients (9.4%) each in the age group 0 – 20 years and 51 years and above.

The circumstances/place of injuries is displayed in figure I. A total of 51 persons (48.1%) were injured at their living quarters (home). Out of this, 42 (39.6%) were injured by neighbours, 7 (6.6%) by household members other than intimate partners and 2 (1.9%) by intimate partner. Injuries at the work/business place affected 30 persons (28.3%), 13 (12.3%) were injured at "drinking joints" (pubs/clubs) and 7 (6.6%) in the street. Three persons (2.8%) were injured following land disputes (on site) while 1 (0.9%) each was injured at school and church. Of those injured at home, 19 were males and 32 females [M: F = 1: 1.6]; at the work/business place, M: F = 1.7: 1; pubs and clubs, M: F = 1.6: 1 and street, M: F = 1.3: 1.

The weapons used in the assault are shown in table II. Four (4) patients did not know the exact weapon used on them. Of the remaining 102 patients, fists/hand (N = 39; 38.2%) were the most commonly used followed by knives and teeth (bite) (N = 11; 10.8%) each; bottle (N = 8; 7.8%); workman's tool (N = 7; 6.9%) and piece of wood and stone (N = 6; 5.9%) each. Gun butt (N = 5; 4.9%), head butt, leg (kick) and

Table 1: Age and Sex distribution of assault victims

Age range in years	Male % (n=106)	Female % (n=106)	Total % (n=106)
0-10	-	0.9%(N=1)	0.9%(N=1)
11-20	3.8%(N=4)	4.7%(N=5)	8.5%(N=9)
21-30	23.6%(N=25)	22.6%(N=24)	46.2%(N=49)
31-40	10.4%(N=11)	13.2%(N=14)	23.6%(N=25)
41-50	7.6%(N=8)	3.8%(N=4)	11.4%(N=12)
51-60	3.8%(N=4)	2.8%(N=3)	6.6%(N=7)
>60	1.9%(N=2)	0.9%(N=1)	2.8%(N=3)
Total	51.1%(N=54)	48.9%(N=52)	100%(n=106)

non- specific blunt metal objects was each used (N = 4; 3.9%). Other weapons, though used very sparingly, include pestle (N = 2; 1.96%); chair, shoe, key, kettle, pressing iron and horsewhip (N = 1; 0.98%) each. The observed cumulative weapon use of 113 (110.7%) is because some patients reported having been assaulted with more than one weapon.

The types of injuries sustained by patients are shown in table III. Laceration and incision (N = 75; 70.8%) were the most common followed by contusion (N =48; 45.3%) while avulsion accounted for 5.7% (N = 6). There were 9 (8.5%) of dentoloalveoalr injuries comprised of tooth breakage and/or loss. Other injuries encountered were rupture of tympanic membrane, N = 2 (1.9%) and burns, N = 1, (0.9%). The various injuries appeared a cumulative 141 times (133.1%). This is because a total of 29 patients (27.4%) suffered more than one injury. Of the 29 with multiple injuries, 19 (17.8%) were aged between 21 – 40 years.

The middle third of the face was most commonly affected (N = 67) followed by the upper third (N = 31) and the lower third (N = 24)

with 16 patients having various combinations. We measured the severity of injuries based on the type of care a victim needed and this is presented in figure II. Patients were classified according to the highest care they needed irrespective of other cares they had received. Most patients (N = 67; 63.2%) required drugs and/or wound dressing only. The rest required specialist care (N = 11; 10.4%) or suturing (N = 18; 17%). One patient (0.9%) required admission while 9 (8.5%) required dental care. More males than females required specialized care (8:3), suturing (12:6) and dental care (8:1) while more females than males (42:25) required only drugs and/or wound dressing. Of the 39 patients requiring treatment beyond drugs and/or wound cleaning/dressing, 17 (16.0%) were of the age range 21 – 30 years.

DISCUSSION

There was a prevalence rate of 45.5% of facial injuries in the study population. This is comparable to other studies which found high prevalence for injuries to the face alone (Olasoji, 1999; Shepherd et al, 1990; Shepherd

Table II: Weapons used [number of patients = 102]

Type of Weapon	Number of times used	%(n=102)
Knife	11	10.8
Bottle	8	7.8
Fist	39	38.2
Teeth (human bite)	11	10.8
Workman's tool	7	6.9
Piece of wood	6	5.9
Leg (kick)	4	3.9
Gun (butt)	5	4.9
Piece of metal (unnamed)	4	3.9
Stone	6	5.9
Head butt	4	3.9
Others*	8	7.8
Total	113	110.7

*pestle (N = 2); hot electric iron, horsewhip, shovel, shoe, bench and kettle (N = 1 respectively)

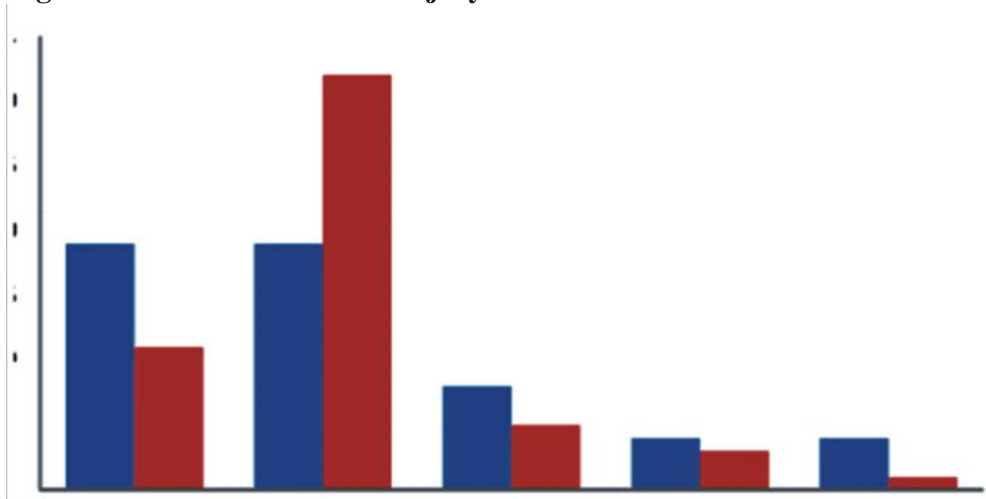
*pestle (N = 2); hot electric iron, horsewhip, shovel, shoe, bench and kettle (N = 1 respectively)

Table III: Type of injury

Age range	<10	11-20	21-30	31-40	41-50	51-60	>60	Total		Grand total(%)
								M	F	
Injury type										
Laceration & Incision	1	7	35	19	7	4	2	41	34	75(70.8%)
Contusion	-	7	21	12	5	2	1	19	29	48(45.3%)
Avulsion	-	-	4	1	-	-	1	3	3	6(5.7%)
Dentoalveolar injuries	-	-	5	2	1	1	-	8	1	9(8.5%)
Others*	-	-	1	-	2	-	-	-	3	3(2.8%)
Total	1	14	66	34	15	7	4	71	70	141(133.1%)

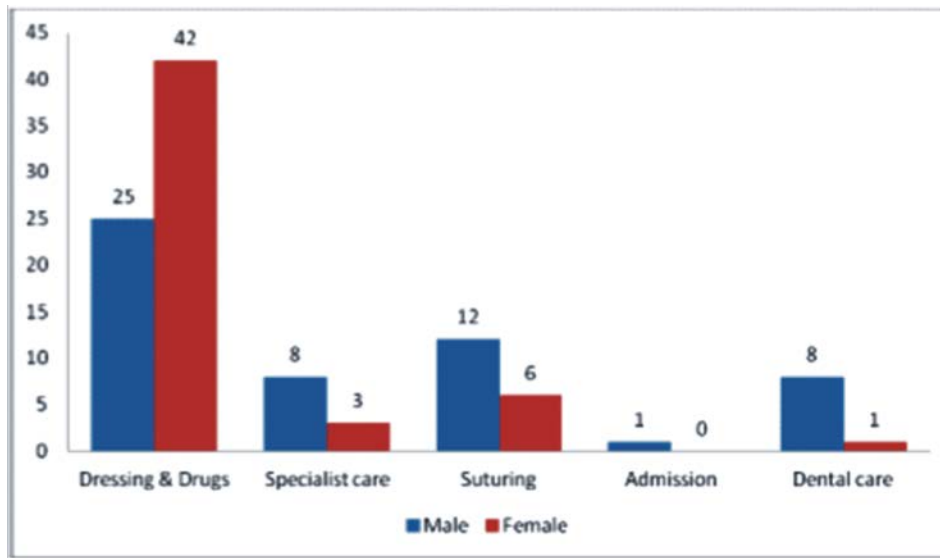
*rupture of tympanic membrane (N = 2); burns (N = 1)

Fig. I: Circumstance/Place of injury



*Land disputes (M = 3; F = 0); school (M = 1; F = 0) and church (M = 0; F = 1)

Figure II: Type of care given



et al, 1987; Brennan et al, 2006; Olaitan and Jiburum, 2008) or to head, neck and face (62% - 83%) following assault (Nkombua, 2007; Brink, 2009). It however contrasts with 21.8% prevalence found by Obimakinde et al (2012).

We found peak age to be 21 – 30 years. This agrees with other studies from Nigerian (Adeyemo et al, 2005; Obimakinde et al (2012) and other parts of the world (van Hoof et al, 1977; Afzeilus and Rosen, 1980). The next most commonly affected age range is 31 – 40 years and also agrees with the finding by Adeyemo et al (2005). This may be because people in this age groups being in the active phase of life are more exposed to circumstances likely to result in assault. Our study did not show any sex-related difference in peak age of incidence in contrast to Salonen et al (2010) who reported peak incidence of 35 – 40 years in males and 45 – 50 years in females. Like Obimakinde et al (2012) we found a progressive decline in incidence with increasing age.

There was no significant gender difference in overall incidence in this study with male to female ratio of 1.1:1 This is in agreement with a study by Shepherd et al (1987) but contrasts with many other studies which reported male predominance (van Hoof et al, 1977; Adebayo et al, 2003; Afzeilus and Rosen, 1980; Obimakinde et al, 2012; Salonen et al, 2010; Greene et al, 1999). Some authors have however reported an increasing female involvement which they think may be because women are now being more involved in high-risk activities (Fasola et al, 2003; Adebayo et al, 2003; Zawitz, 1993). We observed that more of females were injured at home than males, 1.6: 1. This ratio becomes even higher with domestic violence considered alone (2:1). Also, more males than females were injured at the work/business place (1.7:1) and pub/club and street (1.5:1). This reflects our traditional society in which females stayed more at home while males worked more and frequented the pubs more. Most of our patients (N = 78; 73.6%) belong to the low socioeconomic stratum and therefore live in population dense areas and in poor housing conditions. This may account for the high proportion of victims (N = 42; 39.6%) assaulted at home by neighbours/co-tenants. Our finding of most assault occurring at home and the

work/business place contrasts with European and American studies which reported that most fights occurred in the street, club or pub (Adeyemo et al, 2005; Telfer, 1991).

The most common weapon in our study is the fist (38.2%). This agrees with other studies (Shepherd et al, 1990; Nkombua, 2007; Obimakinde et al, 2012; Norkhafizah, 2010). Brink (2009) reported that most assault in his study was caused by a blunt object. Other weapons from this study include various types of knife (N = 11), bottle (N = 8), human bite/teeth (N = 11), leg (N = 4), head (N = 4), workman's tool (N = 7), gun butt (N = 5), and pestle (N = 2) etc. The diversity of weapons in our study and their close mapping to the location of assault suggest that assault in our environment is most often spontaneous. Most injuries from this study apart from the dentoalveolar injuries are minor soft tissue injuries. This contrasts with all other studies we reviewed. Laceration and incisional wound together (70.8%) constituted the commonest injuries. Other studies (Nkombua, 2012; Norkhafizah, 2010) reported contusion as the most common. Though human bite accounted for 14.2% (third commonest) of cases in this study, it was not listed in other studies. However, in one study in Benin, South South Nigeria, Obukwe (2002) reviewed 20 cases of human bite to the face.

The most severe injuries in our study are perforation of tympanic membrane (N = 2) and avulsion injuries (N = 5). There was also only one case of hospital admission. However, other studies reported higher incidences of severe injuries and hospital admission (Shepherd, 1990; Salonen et al, 2010; Norkhafizah, 2010; Obukwe, 2002; Zargar et al, 2004). In the cases in our study in which gun, a lethal weapon was used, the assailants chose to use the butt rather than the bullet. The fact of a high incidence of assault but a prevalence of minor, soft tissue injuries in our study may reflect the transitional state of our society which traditionally united to denounce interpersonal brutality (Onwuejeogwu, 1981).

Males had more severe injuries than females in agreement with findings from other studies (Salonen et al, 2010; Greene et al, 1999) while most of the severe injuries occurred in people

aged 21 – 40 years. Both findings may highlight the active nature of the concerned population. As in other studies (Shepherd, 1990; Norkhafizah, 2010), the middle third of the face is the preferred target in our study.

CONCLUSION

Facial injuries are common outcomes of assault. Young people are mostly the victims. It seems that there is a desire in assailants to disrupt the twin function of identity and beauty that the face serves. Facial injury may be a predictor of assault and caregivers should be aware of this. There is also the need to educate the public of this outcome of assault.

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