SCALP LACERATION: A POPULATION BASED ANALYSIS AMONG THE URHOBOS IN DELTA STATE, NIGERIA

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Abstract: -

Following a traumatic event, head damage is the main cause of mortality and morbidity. This inquiry established the preponderance of Scalp Laceration among the Urhobo population in Delta State, Nigeria. The study adopted a cross sectional study scheme. The study sample comprised of male and female individuals who are from the Urhobo ethnic group. This scrutiny was carried out in Abraka, Eku and Warri in Delta State, Nigeria. The sample size for this study is 384 and the cluster sampling technique was used to select the sample for the study. The required data was collected with the aid of a well-structured self-administered questionnaire. The results were analysed by means of Statistical Package for the Social Sciences (SPSS), version 25.0. Results were presented in frequency distributions, pie charts and cross-tabulation. Chi-square gaged significant differences at a confidence level of 95% while $p < or = 0.05$ was considered as statistically significant. The occipital region of the scalp was shown to be the most recurrent site of scalp laceration.

Keywords: *Scalp, Laceration, Urhobos, Delta, State, Nigeria*

INTRODUCTION

Head injury is the prime cause of death and morbidity following a traumatic event (Saxena *et al*., 2018). Due to advancements in prehospital treatment, resuscitation, and neurologic critical care units, the health system has seen a significant improvement in head injury outcomes in recent years (Lu *et al*., 2015). The health-care system in the developing world, on the other hand, has not improved considerably. As a result, in certain climates, death from preventable and often trivial causes, such as scalp laceration, is widespread. Scalp laceration can present with a profuse loss of blood due to the scalp's well-vascularized supply, yet this fact is sometimes overlooked (Turnage *et al*., 2010).

Head injury, particularly scalp laceration, is a key public health concern that causes disability in young people, lays large demands on health systems, and results in deaths. Epidemiological data is needed to perform appropriate preventative measures and arrange for needed services. Statistics derived from routinely collected data, on the other hand, are tough to come by (Jennett *et al*., 2016). Head injuries with scalp lacerations account for one-quarter to one-third of all accidental deaths and two-thirds of trauma induced deaths, according to research (Brookes *et al*., 2020).

Injury severity levels used for trauma in general have been shown to be particularly inaccurate when it comes to brain injuries. Despite the fact that non-admitted patients account for a large extent of the hospital's head injury cases, there are no routine statistics for accident and emergency departments (Roberts *et al*., 2017). Around half of all accident and emergency room visitors have a scalp laceration, and 15% show symptoms of brain injury, despite just 2% having a skull fracture (Teasdale *et al*., 2014).

Scalp lacerations are common injuries encountered in many head trauma patients who arrive at the hospital. Scalp lacerations are often minor injuries that do not warrant hospitalization or blood transfusion (Hamilton *et al*., 2015). The implications of an untreated or badly managed scalp laceration resulting in significant blood loss are exceedingly dangerous, with a high fatality rate in hospitals and emergency rooms, especially within 24 hours after the accident. While it's common knowledge that scalp lacerations can cause substantial bleeding, it's less common knowledge that tiny scalp lacerations can cause death (Ritchie *et al*., 2019).

Though, scalp laceration is common worldwide and is the main etiology of mortality following head trauma, few studies have been conducted and no studies have revealed its prevalence among the Urhobo population in Delta State, Nigeria. This study established the predominance of Scalp Laceration among the Urhobo population in Delta State, Nigeria. This study divulged useful information about the occurrence and complications of scalp laceration which will help the government to proffer possible solutions to reduce its occurrence and complications. In addition, the current study disclosed data beneficial to the medical field; and this data will also serve as a guide for future studies.

Materials and Methods

Ethical clearance was gotten from the Research and Ethics Committee of Human Anatomy Department, Delta State University, Abraka in Nigeria. The study adopted a cross sectional study stratagem. The study sample comprised of male and female individuals who are from the Urhobo ethnic group. This inquiry was carried out in Abraka, Eku and Warri in Delta State, Nigeria.

The sample size for this study is 384 and the cluster sampling technique was used to select the sample for the study. The required data was collected with the aid of a well-structured self-administered questionnaire. The results were analyzed by means of Statistical Package for the Social Sciences (SPSS), version 25.0. The descriptive statistics was calculated; findings were presented in frequency distributions, pie chart, bar charts and cross-tabulation. Chi-square gaged significant differences between variables at a confidence level of 95% while p = 0.05 was considered as statistically significant.

Results

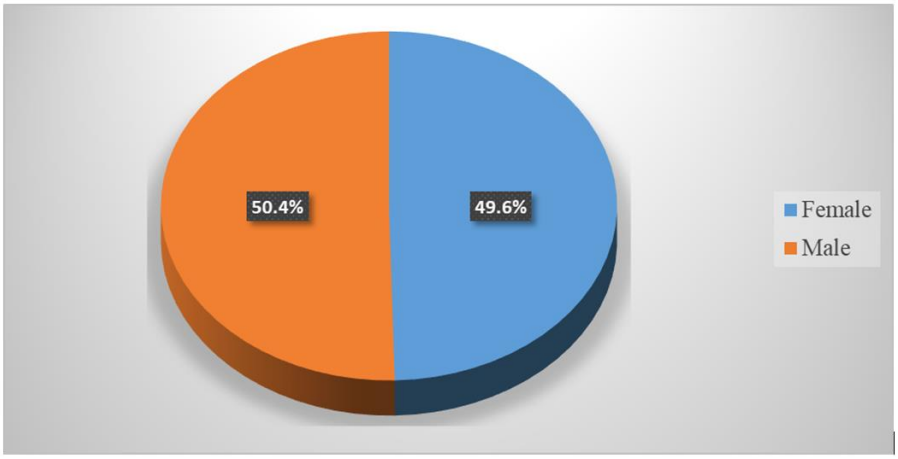

Figure 1: Gender distribution in the studied populace.

Figure 1 represents the gender dispersal of the study folks with male subjects having the highest number (50.4%).

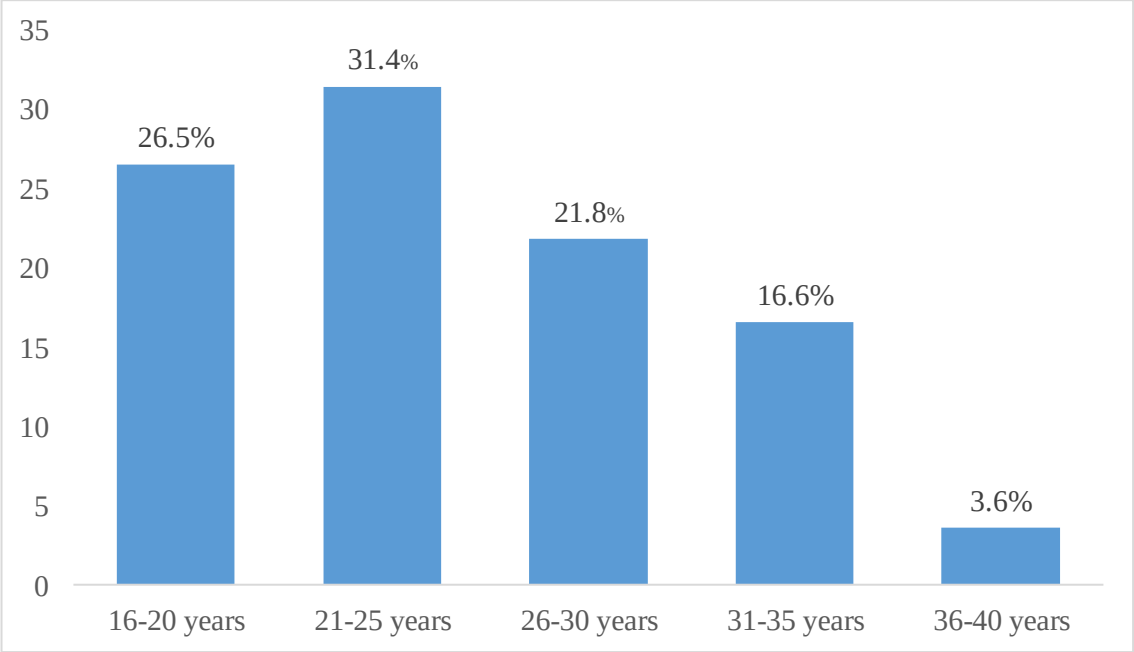

Figure 2: Age distribution in the studied masses.

Figure 2 shows the age scattering of the study populace with 21-25 years age group having the highest number of subjects (31.4%), followed by 16-20 years group (26.5%), 26-30 years group (21.8%), 31-35 years group (16.6%), and 36-40 years group (3.6%).

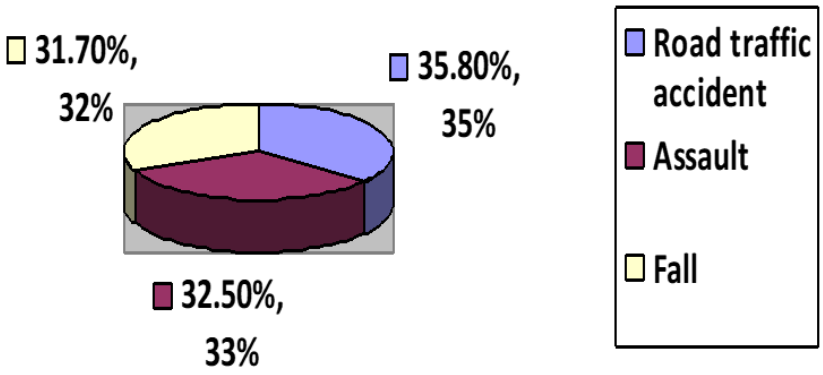

Figure 3: Causes of scalp laceration

Figure 3 shows that the most repeatedly recorded cause of scalp laceration is road traffic accident (35.8%), followed by assault (32.5%), and fall (31.7%).

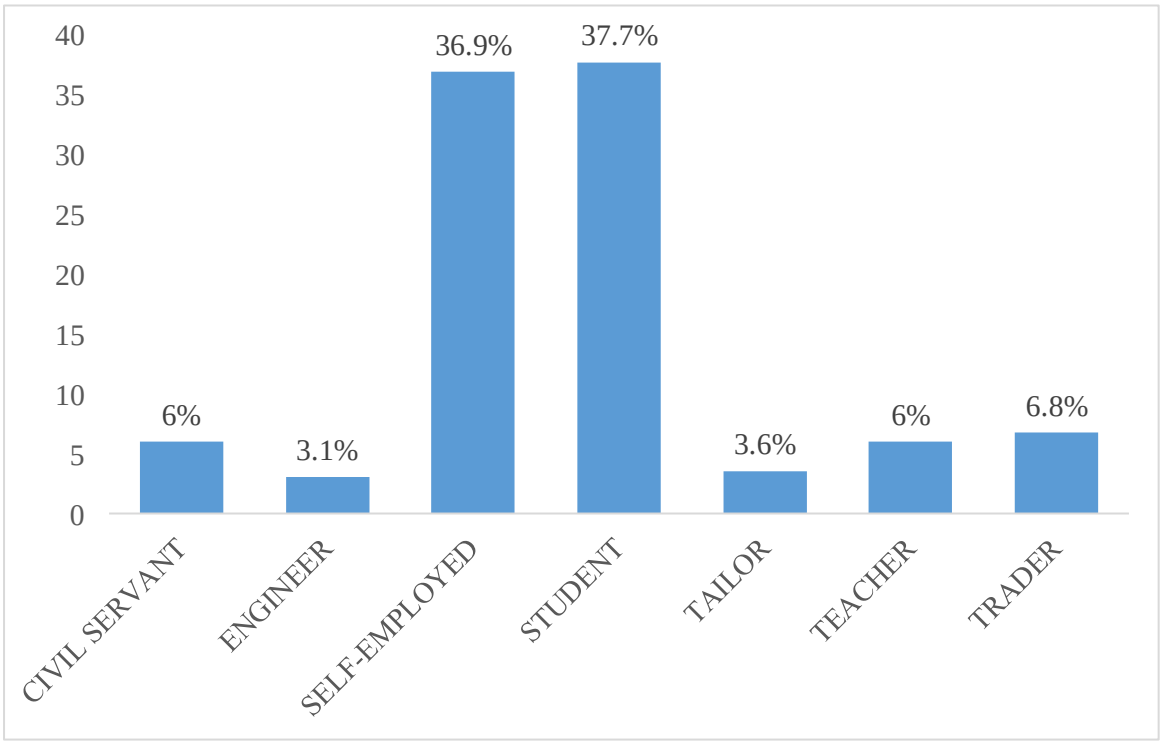

Figure 4: Distribution of occupations in the study sample

Figure 4 divulged that a good number of the participants are students (37.7%) and minority are engineers (3.1%).

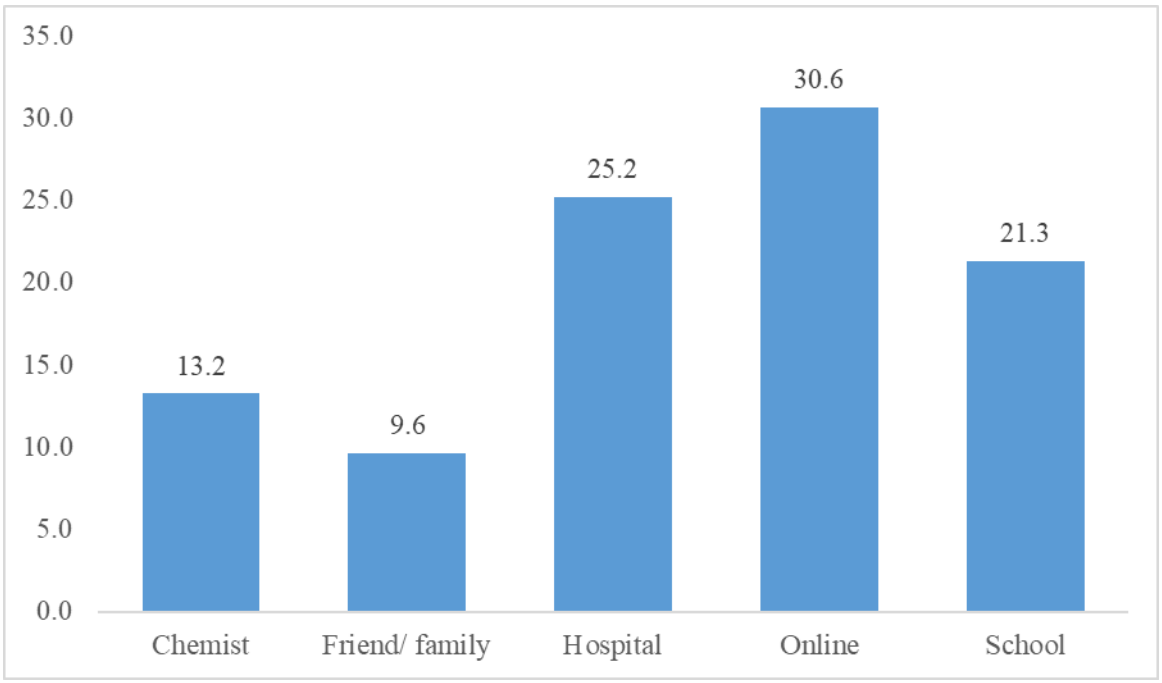

Figure 5: Knowledge source of scalp laceration

Figure 5 represents the source of the knowledge of scalp laceration. Exactly 30.6% subjects responded that they got to know about scalp laceration from Online/Internet, 25.2% from the Hospital, 21.3% from School, 13.2% from the Chemist, and 9.6% from Friend/Family.

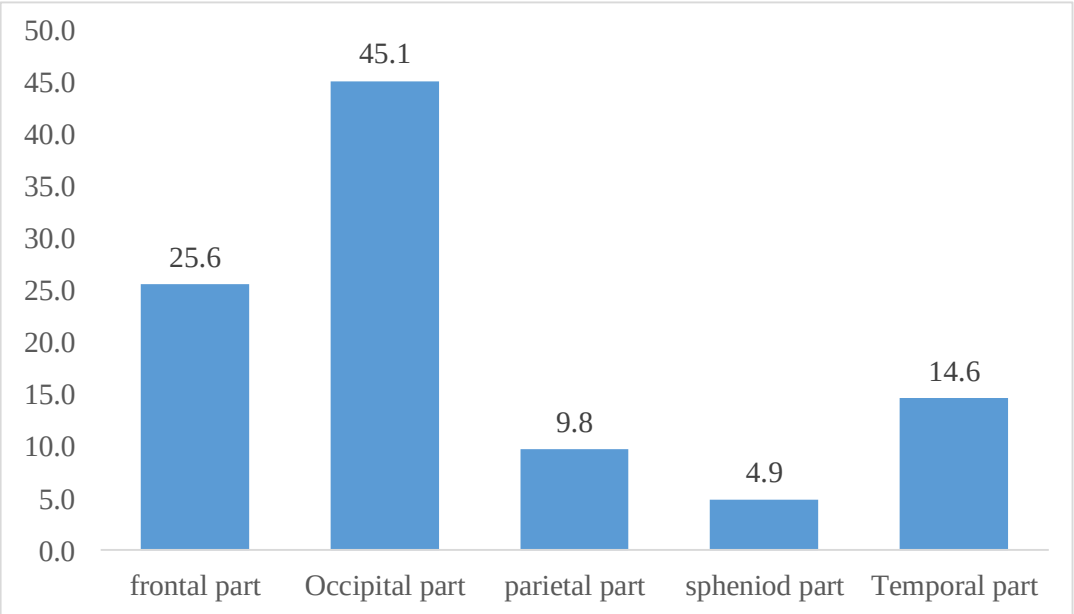

Figure 6: Sites of scalp lacerated.

Figure 6 illustrates that the occipital region of the scalp is lacerated in almost half of the cases (45.1%).

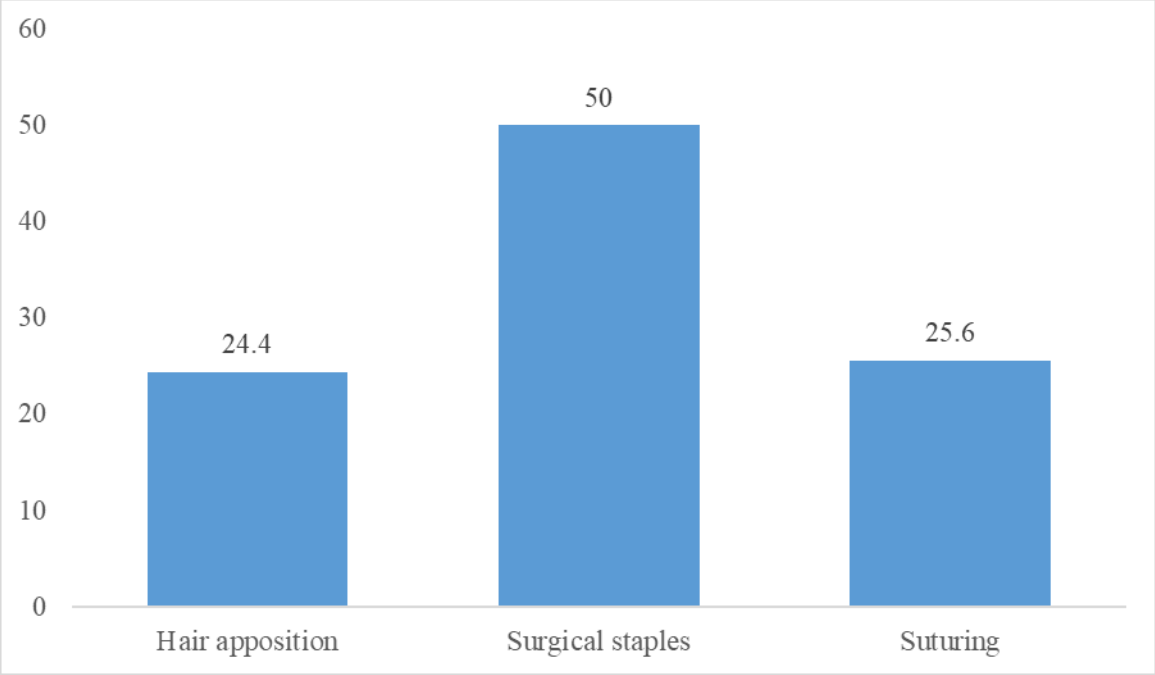

Figure 7: Treatment of scalp laceration.

Figure 7 shows that 50% of respondents were treated with surgical staples, 25.6% of respondents were sutured and 24.4% had hair apposition done for them.

Table 1: Knowledge and awareness of scalp laceration

Knowledge and awareness of scalp laceration	Frequency (%)	
	Yes	No
Have you ever heard of scalp laceration?	145 (37.7)	240 (62.3)
Have you experienced scalp laceration?	82 (21.3)	303 (78.7)

Table 1 shows the awareness of scalp laceration. Precisely 145 (37.7%) respondents had previously heard about scalp laceration while 240 (62.3%) respondents had not. Also, 82 (21.3%) respondents had experienced scalp laceration while 303 (78.7%) respondents had not at the time of the study.

Table 2: Distribution of the month and year of scalp laceration

Period of scalp laceration		Frequency (%)
Month scalp lacerated	December	19 (23.2)
	January	11 (13.4)
	July	4 (4.9)
	March	19 (23.2)
	November	18 (22.0)
	September	11 (13.4)
Year scalp lacerated	2010	17 (20.7)
	2016	21 (25.6)
	2019	16 (19.5)
	2020	28 (34.1)
Total		82 (100.0)

In table 2, results show that December and the year 2020 had the highest cases of scalp laceration with values of 19 (23.2%) and 28 (34.1%) respectively. Others include January 11 (13.4%), March 19 (23.2%), July 4 (4.9%), September 11 (13.4%), and November 18 (22%). Ranging from the least, year 2019 has 16 (19.5%), 2016 has 21 (25.6%) and 2010 was with 17 (20.7%).

Table 3: Complications of scalp laceration

Complications of scalp laceration	Frequency (%)
Bleeding	18 (22.0)
Fracture	19 (23.2)
Itching around lacerated part	24 (29.3)
Pain around lacerated part	21 (25.6)
Total	82 (100.0)

Table 3 shows the complications of scalp laceration. It was observed that most respondents developed itching around the lacerated part with a figure of 24 (29.6%). The other complications including bleeding, fracture of the skull, and pain are of about the same frequencies of 18 (22.0%), 19 (23.2%), and 21 (25.6%) respectively.

Table 4: Chi-square test of association between gender and experience of scalp laceration

Experience of scalp laceration		Male	Female	Chi-square	df	p-value
Have you ever experienced scalp laceration?	Yes	29 (7.5)	53 (13.8)	9.480	1	**0.002**
	No	165 (42.9)	138 (35.3)			
Total		194 (50.4)	191 (49.6)			

Table 4 shows the association between gender and the experience of scalp laceration. It shows that there is a statistically significant association between the gender of the respondents and their experience of scalp laceration, (p=0.002).

Table 5: Chi-square test of association between age and experience of scalp laceration

Experience of scalp laceration		16-20 years	21-25 years	26-30 years	31-35 years	36-40 years	Chi-square	Df	p-value
Have you ever experienced scalp laceration?	Yes	32 (8.3)	20 (5.2)	17 (4.4)	11 (2.9)	2 (0.5)	8.930	4	0.063
	No	70 (18.2)	101 (26.2)	67 (17.4)	53 (13.8)	14 (1.7)			
Total		102 (26.5)	121 (31.4)	84 (21.8)	64 (16.6)	14 (3.6)			

Table 5 reveals that there is no significant link between the age of the respondents and their experience of scalp laceration, (p =0.063).

Table 6: Chi-square test of association between gender and site of scalp lacerated

Site of scalp lacerated	Female	Male	Chi-square	Df	p-value
Frontal part	9 (11.0)	12 (14.6)	3.068	4	0.547
Occipital part	12 (14.6)	25 (30.5)			
Parietal part	1 (1.2)	7 (8.5)			
Spheniod part	2 (2.4)	2 (2.4)			
Temporal part	5 (6.1)	7 (8.5)			
Total	29 (35.4)	53 (64.6)`			

In table 6, results show association between the gender of the respondents and sites of laceration and it was noted that there is no significant association between gender and site of the scalp lacerated, (p= 0.547).

Table 7: Chi-square test of association between age and site of scalp lacerated

Site of scalp lacerated	16-20 years	21-25 years	26-30 years	31-35 years	36-40 years	Chi-square	df	p-value
Frontal part	11 (13.4)	5 (6.1)	5 (6.1)	-	-	21.862	16	0.148
Occipital part	12 (14.6)	9 (11.0)	6 (7.3)	8 (9.8)	2 (2.4)			
Parietal part	5 (6.1)	-	3 (3.7)	-	-			
Spheniod part	1 (1.2)	3 (3.7)	-	-	-			
Temporal part	3 (3.7)	3 (3.7)	3 (3.7)	3 (3.7)	-			
Total	32 (39.0)	20 (24.4)	17 (20.7)	11 (13.4)	2 (2.4)			

Table 7 shows the association between the age of the respondents and the site of scalp laceration. Results show that there is no significant relationship between age and the scalp site lacerated, (p= 0.148).

Table 8: Chi-square test of association between gender and causes of scalp laceration

Causes of scalp laceration	Male Frequency	Female (percentage)	Chi-square	df	p-value
Assaults	13 (15.9)	12 (14.6)	2.691	2	0.260
Fall	14 (17.1)	7 (8.5)			
Traffic accident	26 (31.7)	10 (12.2)			
Total	29 (35.4)	53 (64.6)			

Results in table 8 reveal the association between gender and causes of scalp laceration. There is no significant association between gender and causes of scalp laceration.

Table 9: Chi-square test of association between age and causes of scalp laceration

Causes of scalp laceration	16-20 years	21-25 years	26-30 years	31-35 years	36-40 years	Chi-square	Df	p-value
Assaults	9 (11.0)	5 (6.1)	4 (4.9)	6 (7.3)	1 (1.2)	5.799	8	0.670
Fall	7 (8.5)	6 (7.3)	5 (6.1)	3 (3.7)	-			
Traffic accident	16 (19.5)	9 (11.0)	8 (9.8)	2 (2.4)	1 (1.2)			
Total	32 (39.0)	20(24.4)	17 (20.7)	11 (13.4)	2 (2.4)			

Table 9 shows the association between age and the causes of scalp laceration. It shows that there is no significant relationship between age and the causes of scalp laceration.

Table 10: Chi-square test of association between occupation and causes of scalp laceration

Causes of scalp laceration	Drivers	Self Employed	Chi-square	df	p-value
Assaults	13 (15.9)	12 (14.6)	2.691	2	0.0460
Fall	14 (17.1)	7 (8.5)			
Traffic accident	26 (31.7)	10 (12.2)			
Total	29 (35.4)	53 (64.6)			

Table 10 shows the association between occupation and the causes of scalp laceration. There is a significant relationship between occupation and the causes of scalp laceration.

Discussion

Scalp lacerations are common injuries found in the skulls of injured patients. In the vast majority of cases, the injuries are mild and do not warrant hospitalization or blood transfusion. Treatments include suturing using appropriate suture materials, surgical staples, or more complex scalp clips. If overlooked or managed poorly, scalp lacerations can result in severe blood loss. As a result, patients' clinical status may deteriorate, especially during inter-hospital transfers (Okamoto *et al*., 2011).

The outcomes of this enquiry demonstrated no link between respondents' age and the causes of scalp laceration. This is similar to a study published by Hoyt *et al*., (2018), who found that the causes of scalp laceration were unrelated to age.

One probable explanation is that the frequent causes of scalp laceration affect people of all ages.
The current study found a link vis-à-vis gender and the frequency of scalp laceration, similar to a study conducted in Iraq by Smith (2019). The male gender was more susceptible than the female gender in this indexed study. It's possible that this is owed to the fact that males are more naturally engaged in and exposed to harmful activities that could result in scalp laceration. Jacob (2018) conducted a study that confirmed that the male gender is more prone to injuries owing to the nature of their work.

In this study, it was discovered that there was a substantial link between respondents' occupations and the causes of scalp laceration, with drivers having the largest number of scalp laceration instances due to road traffic accidents. This is because drivers spend the majority of their time on highways, thus they are more vulnerable to road traffic accidents that might result in scalp laceration. This conclusion was backed up by a study that revealed that road transport drivers suffer from scalp lacerations on a regular basis, usually due to traffic accidents (Jacob, 2018).

The occipital portion of the scalp was shown to be the frequent site of scalp laceration in this investigation. This could be owed to the lack of a defensive mechanism in the posterior half of the body, in contrast to the anterior part, where the hands can readily support and shield the head from harm or minimize the effect of a force on the head. This is in contrast to a study conducted in India, which found that the most prevalent site of scalp laceration was the frontal part of the scalp (Morris and Okonkwo, 2018).

Surgical staples were found to be the most commonly used treatment for scalp lacerations in this study. The reason for this could be that the majority of scalp lacerations in the study sample were mild and non-fatal. This contradicts the findings of a study that found fatal and life-threatening scalp injuries (Graham *et al*., 2019). This current finding could be owed to transporters'/drivers' devotion to the government's policy on safety measures in the country's road transportation sector.

Conclusion

The occipital region of the scalp was shown to be the most recurrent site of scalp laceration. Surgical staples were found to be the most commonly used treatment for scalp lacerations.

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