Evaluation of causes and predictors of non-attendance at review appointments following treatment of Maxillofacial injuries

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Abstracts

Background: Causes and rate of non attendance at review appointment in the outpatient clinics vary widely among various clinics and different regions all over the world. Solving the problem of non-attendance may therefore require different and individualized approaches tailored to the peculiarity of the clinic and the locality in focus.

The aims of this study were to evaluate the causes and the predictors of non-attendance at review appointments following treatment for maxillofacial injuries at a sub Saharan tertiary health facility.

Materials and Methods: A prospective, cohort descriptive hospital based study was carried out in a tertiary health facility in South Western Nigeria. Sixty three consecutive adult patients treated for maxillofacial injuries during the study period who met the inclusion criteria were included in the study. The demographic and clinical data of these patients were prospectively collected and analysed.

Results: The mean age of the study participants was 34 (range of 17-83) years with a male to female ratio of 5.3:1. Only 17(27.0%) of the patients attended all four clinic review appointments giving an overall default rate of 73.0%. One hundred percent and 30.8% of the patients with mandibular fractures and soft tissue injuries alone respectively attended the first review appointment. The non-attendance rate at the first outpatient review clinic appointment was 28.6% and this progressively increased to 41.3%, 61.9% and 71.4% at the second, third and fourth review clinic appointments respectively. Out of the 18 patients that missed the 1st review appointment, only 1(5.6%) subsequently attended any of the other appointments. Significant factors that are associated with non-attendance at the follow up review clinic appointments following maxillofacial injuries were age of the patients and types of maxillofacial injury. Commonest reasons cited by study participants for default were 'feeling okay', relocation and financial reasons.

Conclusion: The most significant factors predicting non-attendance at review appointment following treatment for maxillofacial injuries are type of injuries and age of the patient while the most common reason cited by patient for non attendance was feeling okay. Motivating patients adequately before discharge by letting them know the advantages of attending and possible implications of not attending post-op review may be a way to improve attendance.

Key words: Non-attendance, maxillofacial injuries, treatment, review appointment

Introduction

Maxillofacial region is the most obvious aesthetic part of the body and also happens to be one of the most vulnerable parts of the body to injury.[1,2] The main objectives of the treatment of maxillofacial injuries are to restore function, aesthetics and occlusion and to prevent complications. Failure to do this may have adverse functional, aesthetic, occlusal as well as psychological consequences on the patient[3]. Early diagnosis and timely management of complications are essential to achieve optimal result and prevent unfavorable outcome[4,5]. Following treatment of maxillofacial injuries, patients are initially discharged to the clinic for short periods of follow up review appointments. These appointments enable early detection of complications (especially after associated inflammatory response) and monitoring of progress of healing. As satisfactory healing progresses, periods of follow-up reviews are extended until the final discharge from the clinic.

Not all the patients given appointment to attend review clinics eventually come on the appointment day. Non-attendance can have adverse consequences not only on the health care of the patient but also on the health care system resources as well as health care personnel[6,7]. When a patient fails to show up for an appointment, continuity of care is disrupted, opportunities for early recognition and appropriate care for treatable conditions may be missed and the time of the health care provider is wasted with underutilization of resources. These will cause disruption of clinic working plan and an adverse effect on financial performance and also lead to wastage of resources [6,8,9].

Non-attendance hinders follow up on disease progression and outcome of treatment may be lost[10]. Non-attendance of patients can also negatively impact the training of students and resident doctors. Several medical training and examination bodies have a minimum benchmark on the patient related requirements for students and resident doctors before they can progress in their training. Non-attendance by patients makes it difficult to fulfill such mandatory requirements. Non-attendance will affect the number and variety of cases the residents and students learn from and this leads to poorly trained practitioners which may also affect accreditation of health facilities for training[11,12].

Several authors have investigated causes of non-attendance in paediatric clinics[6,13], gastroenterology clinic[8], orthopaedic outpatient clinic[14], dental clinics[15,16,17,18], dermatology clinic[19], psychiatry clinic[20,21], cancer clinics[22,23,24] and among indigent patients [25] with a view to resolving the problem. However, no study has considered the causes of non-attendance at follow up visits following treatment of maxillofacial injuries in Nigeria. Therefore, we aim to prospectively evaluate the causes and predictors of non-attendance at review appointments following treatment of maxillofacial injuries at our centre.

Patients and Methods

This study is a prospective, cohort descriptive hospital-based study carried out at the Accident and Emergency department and Oral and Maxillofacial Surgery clinic of the University College Hospital (UCH), Nigeria. Our centre is a teaching hospital that serves as a tertiary referral centre for Maxillofacial, Neurosurgical and Plastic Surgery.

The study population consisted of 63 consecutive adult patients (16 years and above) that presented with maxillofacial injuries to the study centre who met the inclusion criteria during the study period between February 2012 and March 2013. The inclusion criteria included patients that were treated for maxillofacial injuries at our centre and required follow up appointments for post-operative review. These patients were followed up for four consecutive visits. Patients that had their initial treatment outside our centre or declined to participate in the study were excluded from the study. In this study, a defaulter refers to a patient that missed any of the four follow up review appointment. An intermittent defaulter refers to any patient that attends part but not all of the follow up review appointments while a permanent defaulter refers to a patient that did not attend any of the four follow up review appointments.

Demographic, personal contact and clinicopathological data of the patients were collected using a well-structured questionnaire. The structured questionnaire used was piloted in the outpatient clinics of the Maxillofacial Surgery department before using it in the current study. Patients that did not turn up for their review appointments were telephoned to obtain the reason(s) for missing their appointment. Attendance at the 4 separate review appointments by each patient was noted and patients were grouped into those who attended and those that did not attend. However, for the purpose of statistical analysis, the first clinic appointment was used to test the various variables. Data was collected and

analyzed using SPSS 22.0 statistical software package (SPSS Inc., Chicago, IL, USA) to present descriptive statistics and variables that may affect attendance at outpatient clinic appointments were evaluated using univariate analysis (Chi-square test) for categorical variables with a p-value less than 0.05 considered significant.

Results

There were 63 participants in the study with the mean age of 34 (17-83) years and male to female ratio of 5.3:1. The socio-demographic, clinicopathologic characteristics of the patients and the pattern of maxillofacial injuries are shown in Table 1. Only 17(27.0%) of the patients attended all four clinic review appointments giving an overall default rate of 73.0%. Among the defaulters 29(63.0%) were intermittent defaulters while 17(37.0%) were permanent defaulters. The pattern of attendance at review clinic appointment is depicted in Table 2.

Table 1: Socio-demographic and clinicopathologic characteristics of the study participants

Characteristics	Number	Percent
Age (years)		
11-20	4	6.3
21-30	32	50.8
31-40	13	20.6
41-50	7	11.1
51-60	5	7.9
61-70	0	0.0
71-80	1	1.6
81-90	1	1.6
Sex		
Male	53	84.1
Female	10	15.9
Marital status		
Single	27	42.9
Married	36	57.1
Highest education		
None	3	4.8
Primary school	13	20.6
Secondary school	25	39.7
Post secondary school	16	35.4
NA	6	9.5
Occupational scale		
Partially engaged	8	12.7
Very junior grade	27	42.9
Junior grade	7	11.1
Intermediate grade	1	1.6
Senior grade	9	14.3
NA	11	17.5
Residence		
Inner Ibadan city	45	71.4
Outer Ibadan city	6	9.5
Outside Ibadan	12	19.1
Type of injury		
Soft tissue alone	13	20.6
Mandibular fracture	9	14.3
Midfacial fracture	4	6.3
Mandibular and midfacial fracture	2	3.2
Soft tissue and facial fracture	30	47.6
Dental and dentoalveolar fracture	2	3.2
Panfacial fracture	2	3.2
Associated injury		
Neurosurgical	13	20.6
Orthopaedic	5	7.9
thoracic	2	3.2

Table 2: Pattern of attendance at review clinic appointments

Clinic review visits	Number	Percent
Attended no review visit	17	27.0
Attended 1 review visit	9	14.3
Attended 2 review visits	13	20.6
Attended 3 review visits	7	11.1
Attended all 4 review visits	17	27.0

All patients with facial fractures attended the 1st review appointment whereas only 30.8% of the patients with soft tissue injury alone attended the 1st review visit.

Out of the 18 patients that missed the 1st review appointment, only 1(5.6%) subsequently attended any of the other appointments. The pattern of non-attendance also showed that none of the patients who missed the second appointment attended any of the subsequent appointments. The non-attendance rate at the first outpatient review clinic appointment was 28.6% and this progressively increased to 41.3%, 61.9% and 71.4% at the second, third and fourth review clinic appointments respectively (Figure 1). Various reasons given by the patients for non-attendance at review appointments are shown in Table 3.

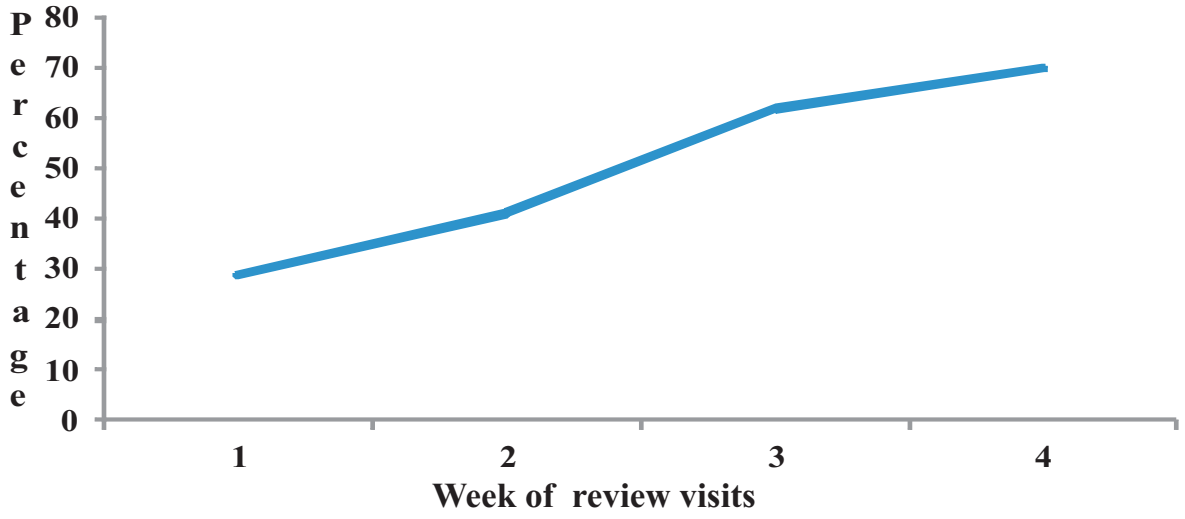

Figure 1: Pattern of review appointment non attendance

Table 3: Reasons for non-attendance at the review appointments

	Week 1 review		Week 2 review		Week 3 review		Week 4 review	
	n	(%)	n	(%)	n	(%)	n	(%)
Reason for missing review appointment								
Feels okay	2		4	15.4	6	15.4	7	15.9
Travelled		11.1	2	7.7	3	7.7	1	2.3
Relocated			2	7.7	3	7.7	3	6.8
Financial reasons	2		1	3.8	2	5.1	2	4.6
Busy at work		11.1	1	3.8	2	5.1	3	6.8
Doctor told me my treatment	1	5.6			1	2.6	1	2.3
was complete							1	2.3
Industrial action in the hospital							1	2.3
Distance								
No reason	2	11.1						

Significant factors that are associated with non-attendance at the follow up review clinic appointments following maxillofacial injuries on univariate analysis were age of the patients and types of maxillofacial injury. Patients in the older age group showed poorer attendance (p-value =0.003), types of injury with patients who sustained only soft tissue injury unlikely to attend their review clinic appointments compared with those with bony injuries with or without associated soft tissue trauma (p-value = 0.0001). Patient with lower educational level and those with no other associated systemic trauma were more likely to miss their review clinic appointments but these two did not reach a significant statistical level (p-values of 0.099 and 0.076 respectively). The clinicopathological variables of non-attendance at the review clinic appointments are shown in Table 4. We did not find gender, marital status, distance patients had to travel to the clinic, occupational pay level to have any significant bearing on the non-attendance at the review clinic appointments following maxillofacial trauma.

Table 4: Clinicopathological variables for nonattendance at the review clinic appointments

Factors	Attended (45)	Did not attend (18)	p-value
Gender: M	37	16	0.513
F	8	2	
Age: 17-30 yrs	31	5	0.003
31-80 yrs	14	13	
Marital status: Single	21	6	0.334
Married	24	12	
Residence of abode: Ibadan metropolis	31	14	0.480
Outside Ibadan metropolis	14	4	
Educational level: Higher education	14	2	0.099
Lower education	31	16	
Occupational pay level: Lower	38	15	0.913
Higher	7	3	
Injury types: Soft tissue only	4	9	0.0001
Bony +/- soft tissue	41	9	
Associated systemic injury: Present	12	9	0.076
Absent	33	9	

Discussion

Non-attendance at review appointments is a global challenge affecting all aspects of medical care. Previously published studies show wide variation in the rate of non-attendance at different clinics ranging between 3% - 80% [8,14,26,27,28,29]. From our literature search, we did not find any previous study that looked at non-attendance in maxillofacial surgery outpatient clinic. However Ogunmuyiwa et al. in reporting their experience among cleft patients in a tertiary health facility in Nigeria reported a non-attendance rate of 80.0% at the 3rd follow up review visit[29]. This is higher than our own finding in this study with a non-attendance rate of 61.9% at the 3rd follow up review visit increasing to 73.0% at the 4th follow up review visit among follow up review visit among patients with maxillofacial trauma. This could be due to the age of the patients. The cleft patients in the study of Ogunmuyiwa et al. were mainly paediatric patients that may be too young to have a say in the attendance of review appointments.

Several factors have been reported in the literature to be associated with non-attendance albeit with different results from different studies. In this study, we found a positive correlation between the type of maxillofacial injury and non-attendance at review appointment. Poorer attendance was found to be associated with soft tissue injury without facial fracture. At the first review appointment, all patients with facial bony fractures with or without associated soft tissue injury attended while 60.9% of those with soft tissue injury alone did not attend. Some other authors have also reported a positive correlation between perception of more pressing health problems and attendance at follow-up visit [15,25,30,31]. Patients' attitude have been reported in several published works as a major factor in non-attendance[32]. Most patients avoid visiting the hospital until there is either a pressing need, disabling or incapacitating health condition. Patients that have been given appointment date easily find excuse not to attend once the condition is not incapacitating. Gould et al. in their own study reported that patients with clearly defined reasons for seeking medical attention tend to keep appointment while those with the vaguest reasons tend not to[32]. A number of the injuries in the maxillofacial region may not be incapacitating and patients may have no compelling reason to attend review clinic appointments . Patients presenting with facial fractures are likely to have functional (masticatory and speech) and aesthetic (occlusal derangement, distorted facial appearance) challenges. Even after treatment especially in resource limited nations where maxillomandibular fixation is still widely used in the treatment of facial fractures, patients are left with different degrees of disability which will compel them to attend review visits. On the contrary, patients with only soft tissue injury may not have much debilitating challenges except for aesthetic reasons which may not be so compelling to make them to be present at review visits. This study has revealed that the degree of disability or incapacitation may influence attendance at review visit following maxillofacial injury. Patients with maxillofacial injuries that are associated with little or no incapacitation or disability may have higher tendency to default. Unlike our finding, no association was found between the severity of illness and non-attendance in the studies of Sharp and Frankel et al. their studies revealed that severity is not associated with default except psychiatric illness where default may be a marker of severity of illness[33,34]

Some studies have reported younger age group to be associated with poorer attendance[35,36,37,38] however Ng et al. in their own study found no association between age and non-attendance[39]. In this study, we found older age group to have significant correlation with non-attendance at follow up visit. This could be due to the fact that maxillofacial injuries is less common among the older age group[40,41]. Poorer attendance among the older age group in this study could also be due to difficulty in coping with the stress of transportation, frequency of visit as well as the likelihood of low socioeconomic level in this age group.

Gender has also been reported to be associated with non-attendance in a number of studies[12,33]. Sharp et al. reported male gender to be associated with higher rate of non-attendance[33] contrary to the findings of other authors that reported a higher rate of non-attendance among females[12,36]. However, in this study we found no association between gender and non-attendance in agreement with the findings of some other authors.[7,24,39]

On possible association of patients' socioeconomic factors and pattern of attendance at scheduled appointments, some previously published work have shown a positive correlation [6,22,23,35], while Ng et al. reported no association[39]. Van der Meer reported no significant association between non-attendance and educational status[42]. However in the study of Deyo et al., lower educational attainment was reported to be associated with higher non-attendance rate[26]. This is

similar to the finding of Johnson et al. that reported lower tendency to default among the people with full time education[22]. In agreement with the findings of Johnson, the present study found a higher rate of non-attendance (51.6%) among patients with lower educational attainment compared to 14.2% in those with higher educational attainment. As opined by Ng et al., education could help in driving awareness as well as improve attitude towards better healthcare and compliance[39].

Numerous studies have reported a strong correlation between previous missed appointments and non-attendance at the subsequent review appointments[7,16,20,21,30]. We also found a similar pattern in this study in which almost all the patients (except one) that missed an earlier appointment failed to attend any of the other subsequent review appointments.

In the present study, we did not find any significant association between marital status, and patient attendance at maxillofacial outpatient review clinic.

Patients' occupation seemed to play a significant role in the rate of non-attendance as patients in senior occupation category had less tendency to miss review appointments. This could be attributed to the fact that senior occupation is likely to be associated with higher income. This is similar to the findings of Ayad et al. who reported a decrease in rate of missed appointment as patient income increased. They opined that patient with a higher income are more ready and willing to pay for treatment because they can afford it[12].

Different reasons for patients' non-attendance at review appointments have been documented in previous published works[12,13,17,18,21]. Our findings of 'feeling okay' as one of the reasons cited by patients for defaulting is similar to 'resolution of symptoms' cited by patients in a similar study by Cosgrove et al.[43] This could be due to the fact that when patients feel that their illness or injury is healing or resolving, they may not be motivated to attend clinic again especially when some form of financial and non-financial commitment(such as time, transportation cost, consultation fee) will be involved. Relocation and financial reasons are other common reasons given by patients in this study for defaulting at review appointment. Similar studies from this environment have also cited financial reasons as a main contributory factor to non attendance[13,21]. Payment for health care services in Nigeria is still largely by 'out of pocket' option, unfortunately majority of citizens find it hard to afford the payment for their health care and so may easily find excuse for not attending the clinic. Relocation to a place remote from the clinic may discourage the patient from attending review appointment especially if the patient belongs to the lower occupational pay level.

The limitations of this study may include the small sample size, wide gender distribution and non-inclusion of other variables such as the day of the week, time of the day, season of the year and distance patients have to travel to the hospital that have been shown to affect non-attendance in the literature.

Conclusion and recommendation

Patients who sustained maxillofacial injuries which cause little or no incapacitation are likely to have little or no motivation to attend review clinic especially if they have financial constraints. As this may have to do with attitude, motivating patients adequately before discharge by letting them know the advantages of attending and possible implications of not attending post-op review may be a way to improve attendance. Also making health care affordable and accessible to all individuals may improve review attendance.

Future studies with a larger sample size that will include other factors that have been documented in the literature that affect attendance and looking at different ways to improve the attendance is recommended.

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