ORIGINAL ARTICLE

PATTERN OF DENTAL TREATMENT IN PATIENTS ATTENDING THE DENTAL CENTRE UNIVERSITY OF MAIDUGURI TEACHING HOSPITAL, MAIDUGURI NIGERIA

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ABSTRACT

Background: This is a retrospective study of the pattern of dental treatment given in a Teaching Hospital in North Eastern region of Nigeria within a period of three years coinciding with the establishment of the Dental school culminating in the departmentalization of the Dental Clinic into different specialities. **Objectives:** To document the pattern of dental treatments. **Materials and Method:** This is a retrospective study of dental records of patients attending the dental clinic of a Teaching Hospital. Some criteria were set to determine regular attendees and these were recalled for clinical examination. **Result:** More males (52.6%) sought treatment than females (47.4%), while surgical related procedures (55.3%) were more frequently carried out than restorative (34.5%) and periodontal related procedure (9.2%). Females had more restorative treatment (62.3%) than males (37.7%) periodontal related procedures was 9.2% of all treatment given with male preponderance (61.8%). Caries was the major cause of all treatment given (64.4%) while periodontal related causes was 17.3%. **Conclusion:** Number of males seeking dental treatment was more than females and so was the treatment given; however, more females tend to seek for restorative care than their male counterparts. Less females underwent surgical procedures as they may prefer restorative procedures than males. More extractions were carried out so there is the need for government's intervention in oral health policy of the state and Nigeria.

Key Words: *Pattern, dental treatment, restorative, dental clinic.*

INTRODUCTION

Good oral health has been defined as a condition of freedom from caries, periodontal diseases and disorders that affect the oral cavity[1] and the presence of these conditions which are most often not self limiting may affect the person's well being and overall quality of life[2]. Several studies have been carried out on tooth loss in Nigeria but general pattern of treatment given in relation to some demographic factors are scarce.

There is a great effect of oral diseases on communities which may lead to pain and suffering, impairment of function and reduced quality of life that results from it. Oral health programmes have not been integrated into national and community programmes in most developing countries especially in West Africa[3,4] and this is not unconnected with the high prevalence of serious life threatening conditions and diverse communicable diseases[5,6].

The pattern of oral diseases in every community require that epidemiological data collection will aid the planning of health care systems and in understanding the nature of oral health diseases. It is essential that oral health services and care be properly planned so as to provide effective service and also to have a system of evaluation of these services.

Oral health policy and survey on oral health diseases are scarce in developing nations especially more in West African countries and most of the populations are subjected to an alarming increase in new and untreated dental caries which most of the time result in severe pain and spread of infections[7-10].

In a developing economy like Nigeria, oral

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health data collection has been difficult, laborious and far in between thus making oral health care planning for the population very difficult.

Government responses to these challenges are inadequate as regards to the availability, accessibility and affordability of these services especially in semi-urban and rural communities, although these services are somewhat better in urban settings.

The aim of this study is therefore to find out the pattern of treatment sought and given to enable the formulation of policy on availability and accessibility of dental services and utilization

MATERIALS AND METHODS

This study is a retrospective one that depends on the record produced by the various practitioners and the decision reached by them formed the basis of treatment actually given to the patients.

This study dealt only with records of adult patients thus all patients below the age of 18 years were excluded from this study because the Nigerian constitution stipulated that this is the age at which a Nigerian can vote and be voted for. It is also assumed that the educational age is that when a child starts primary school at age 6, spends six years in the primary school and 6 years at the college level before graduation making a total of 18 years.

This study consisted of 645 patients seen over a period of three years by different operators in a Teaching Hospital in North East of Nigeria. The dental clinic was evolving at this time to a dental teaching hospital. At this time there was no organized departmental method of seeing patients and the record system was not properly codified and established. The records of patients seen were the materials used in this case to collate the data on the treatment given to the patients and the treatment plan

The treatment given was coded to determine the frequency and type of treatment given.
The treatment given to the patients were listed as follows:

Extractions
Cleft repair
Surgical procedures including biopsies
Disimpaction of third molars
Immobilization of jaw factures
Trismus correction

All of the above were categorized as oral surgery procedures while the under listed procedures were classified as restorative procedures which include the following:

Amalgam filling
Root canal treatment
Composite Restoration
Dentures (Removable partial Dentures)
Bridge work (Fixed partial Dentures)
Re-cementation of dislodged crowns
Porcelain fused to metal crowns

Periodontal related procedures include the following

Scaling and polishing (Dental prophylaxis)
Dentinal hypersensitivity
Currettage
Halitosis

Other procedures carried out were orthodontic cases, complications arising from extractions and aphthous ulcer and all of these were grouped together under “other procedures”.

RESULT

This survey consisted of 350 males and 295 females accounting for 60.3% and 39.7% respectively while the age range was between 18 years and 66 years. Twelve cases of aphthous ulcer were recorded with male preponderance 66.7% while female accounted for 33.3%. All the complications associated with tooth extraction
(Dry socket) were found in females.

There were 1942 courses of treatment given, with males accounting for 52.6% of all courses of treatment while females accounted for s 47.4%. Surgical procedures formed 55.3% of all the courses of treatment carried out and males accounted for 60.6% of all the surgical procedures. Periodontal procedures formed 9.2%, aphthous ulcer was 0.6% while complications arising from extraction was 0.3%. For restorative procedures males accounted for 62%. All the complications arising from extraction occurred in females in this study while only one orthodontic case was seen (Table 1).

Analysis of all surgical procedures indicated that tooth extraction was far the commonest procedure 82.2%. Minor surgeries carried out included biopsies and suturing of lacerations 7.0%, cleft repairs under local anaesthesia 4.9%, dis-impaction of third molar 3.5%, Jaw fracture immobilization 2.1% and relief of trismus 0.3%.

For periodontal procedures males received 61.8% while females had 38.2% of all periodontal procedures. The other procedures were categorized as "Others" since they formed a small proportion of the total procedures carried out.

More courses of extraction were done in males (62.3%) than in females (37.7%). Minor surgeries and 3rd molar dis-impaction were almost the same in males and females but females had more cleft repairs than males, while jaw fractures were more common in males (95.6%) than females (4.4%). Incidence of trismus even though very low was twice as commonly seen in females than males.

Of all the surgical procedures performed in males 84.6% was extraction while it formed 78.5% of surgical procedure done in females (Table 2).

For restorative procedures, males received 37.7% of all procedures while females had 62.3%. Amalgam filling made up 59% of all restorative procedures, root canal treatment was 20.6%, composite restoration 7.9%, removable of partial denture was 3.9%, fixed partial denture 2.8% while porcelain fused with metal was 5.7%. For every one of those restorative procedures, females accounted for more percentage than males (table 3).

For periodontal related procedures, scaling and polishing formed the bulk of treatment carried out (87%) and more males had more courses of treatment in all related periodontal procedures (61.8%) than females (38.2%). Males also had more scaling and polishing (62.5%) than their female counterparts (37.5%) as detailed in Table 4.

TABLE 1 TOTAL NUMBER OF COURSES OF TREATMENT BY GENDER

	M	F	TOTAL	%
SURGICAL PROCEDURES	651	424	1075	55.3
RESTORATIVE PROCEDURES	253	418	671	34.5
PERIODONTAL PROCEDURES	110	68	178	9.2
ORTHODONTIC PROCEDURES	0	01	01	0.1
ORAL MEDICINE PROCEDURES	08	04	12	0.6
ALVEOLAR OSTEITIS	05	0	05	0.3
TOTAL	1022	920	1942	100

TABLE II: ORAL SURGERY PROCEDURES

	M	F	TOTAL
EXTRACTIONS	551	333	884
SURGICAL PROCEDURES	39	36	75
CLEFT REPAIR	21	32	53
THIRD MOLAR DISIMPACTION	18	20	38
JAW FRACTURES	21	01	22
TRISMUS	01	02	03
	651	424	1075

TABLE III: RESTORATIVE PROCEDURES

	M	F	TOTAL
AMALGAM FILLINGS	168	228	396
ROOT CANAL TREATMENT	58	90	138
COMPOSITE RESTORATIONS	15	38	53
REMOVABLE PARTIAL DENTURES	08	18	26
FIXED PARTIAL DENTURES	01	04	05
RE-CEMENTATION OF AJC	01	0	01
CROWNS	0	10	10
	281	458	739

TABLE IV: PERIODONTAL RELATED PROCEDURES

	M	F	TOTAL
SCALING AND POLISHING	97	58	155
CURETTAGE	11	08	19
DENTAL HYPERSENSITIVITY	01	02	03
HALITOSIS	01	0	01
	110	68	178

DISCUSSION

This study being a pioneer study is about the dental treatment procedures carried out in a Teaching Hospital in Maiduguri, a town in North Eastern part of Nigeria. In several developing economies especially in west African states, there has been lack of planning as regards oral health and diseases so much so that oral health care programmes and policy are lacking[3,4]. Dental conditions when not treated usually leads to discomfort and pain which usually affects the oral health well being and general health and the quality of life of the patient. In addition there are some factors that may militate against the patient seeking for dental treatment. When patients start to feel they have a need for dental treatment it usually gives rise to demand for health care and therefore it becomes a duty for the dentist

to diagnose and prepare a treatment plan to take care of the conditions complained of in developing countries. Some studies may be prone to information bias because the dental care provider involved were aware that they were participating in a study, but this is not applicable to this study.

This study revealed that surgical related procedures formed the bulk of treatment given to patients attending the hospital. This may be related to the fact that the dental centre of the hospital started as a dental unit with a specialist in oral and maxillofacial surgery as the foundation staff and also doubles as the training centre for resident doctors in oral and maxillofacial centre. The period of this study coincided with the entrance of the first set of dental students in the clinical school

Extraction formed the bulk of surgical related procedures (82.2%) and it also accounted for 45.5% of all treatments given. In developed economies where most of the procedures carried out were attempts at re-restoring fillings but in most developing economies, extraction forms the major treatment given to patients. This is because most patients tend to neglect their oral health in relation to their medical health and to worsen the scenario the services provided at most dental clinics gives precedence to curative, rehabilitative and emergency care over preventive measures. Caries was the reason cited for extraction (77.7%) while periodontal disease was the cause of extraction in 18.8%. Although unlike the other studies carried where women and children are more affected than males[10,11,12] more males were seen and treated in this study

In a developing economy like Nigeria, dental patients only visit the dental clinic when there is severe pain and treatment is urgently needed; a culture of regular or routine check up is absent[11,13] and the patients usually present themselves at late stages of dental disease.[14-17]

It is even more pertinent to note that in Maiduguri Borno State where this study was carried out, there are only two government dental centres located in the state capital while the 17 remaining local governments lack any dental facility. Dental specialists are found only in the teaching hospital while other dental facility which is a state government owned has only 5 dentists and all of these serve a population of about 3 million people. All these facts reflect the difficulty and challenges posed to accessibility, affordability and availability of oral health care services and because of these most visits to the dental clinic was undertaken for symptomatic reasons.

It is easier, cheaper and faster, less time consuming for patients to have extraction done than seek for alternative restorative treatment. The national Health insurance Scheme (NHIS) which though is presently limited to federal government workers does not cover most dental procedures and was not even existent at the time of this study.

Males are more prone to jaw fractures in this study and this may be due to the preponderance of motor bikes as a means of commercial transportation in Maiduguri metropolis. Conversely cleft repairs are more common in females and this may be attributed to females caring more about their appearance than their male counterparts.

Caries was the reason given for all the amalgam restorations in this study and this forms 59% of all restorative procedures, 92% for root canal treatment procedures, 53% of all composite restoration, thus in total it formed 82% of all restorative procedures. In totality, caries accounted for 64.4% of all procedures carried out in this study. In contrast a study [18] showed that 30% of those demanding treatment were due to decayed teeth whilst 35%, 27% and 17% of those seeking dental treatment needed surgical, restorative and periodontal care whereas this study showed that 55.3%, 34.6% and 9.2% of treatment given were for surgical, restorative and periodontal care respectively. There is a shift to female when restorative care is involved as more courses of treatment were carried out for amalgam fillings, root canal treatment, composite restorations, removable

or fixed partial denture. Despite this the majority of courses of treatment were surgical related and this may be due to relative cost of restorative care making patients opt for the cheaper surgical alternatives

Considering the cause of treatment both for surgical and restorative related procedures, caries accounted for 64.4% of all treatment carried out which is comparable to the study conducted in Burkinafaso[17] while periodontal disease accounted for 18.2% of extractions done. In the same study, women and younger age group were found to be influenced more by the cost of dental care while some studies noted that the utilization of dental services was found to be higher in females compared to males which are in agreement with the findings in some studies. [19-22]

The case of one dental clinic to serve a population of over 4 million people with oral health care seekers travelling over 600Km to seek for treatment is grossly inadequate. In some other studies conducted in rural population of India, it was discovered that unmet treatment need of the population is very high and the services present are inadequate in most parts of the country. [23,24]

There should be introduction of out of town or outreach programs that will take oral health programs and care to the community periodically which can also serve as referral points to specialized centres in the metropolis. The accessibility and availability aims of general well being are defeated in this scenario due to the challenges faced by oral health seekers. All these will allow or breed "quackery" if a patient would need to travel for 3-5 hours to get to where he or she could be treated.

It may be inferred that even though more males were seen in this study more females had restorative care than male while caries still form the largest proportion of treatment given. For amalgam restoration the male to female ratio is 7:5, for RCT and composite restoration 1:2 thus affirming that females tend to have their teeth restored rather than removing it. It is also in agreement with extraction as less female patients removed their teeth than males therefore it can be concluded that any treatment that would involve more time and or probably more money may discourage men from taking that course of treatment. For prosthetic care more treatment course were given to women than men (2:1), for jacket crowns the ratio was more 7:2 and fixed prosthetics 3:1

In conclusion, the treatment prescribed and performed by the dentist in this study were more of surgical related therefore there is the need to move away from surgery to a more restorative care. Oral health care provision in the state needs to be revisited revised and in most cases included in the general health policy. Local government councils should as a matter of urgency start an oral health care services provision at all the primary health centres. Well trained and supervised health care personnel should have oral health care programs included in their training. Alternative approach is to devise a special oral health programs targeted at the rural communities for specially trained oral health care personnel to handle simple and uncomplicated oral health needs. Females tend to care more about their appearance than men so are ready to keep their appointment for restorative care.

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