

REASONS FOR EXTRACTIONS IN PATIENTS SEEN IN PAK FIELD HOSPITAL LEVEL 3 DARFUR, SUDAN

¹AJMAL YOUSAF BDS, FCPS

²SAAD MAHMOOD BDS, FCPS

³NASRIN YOUSAF, MBBS

⁴KHURSHID ALI BANGASH, MBBS, MCPS, FCPS

⁵MANZOOR AHMED MANZOOR, BDS, MCPS, FCPS

ABSTRACT

This cross sectional study was conducted at Pak Field Hospital Level 3 Darfur Sudan from Jan 2011 till May 2012 to find out the reasons for extractions of teeth in UNAMID troops. 1500 patients from various countries were interviewed and examined. Percentage of six common reasons (caries and its sequel, periodontal problems, impactions, prosthetic, orthodontic and other causes) were calculated by SPSS version 16, as whole, separate for male, female and for individual countries. Results showed that Overall 41.2% of the teeth were extracted due to advanced dental caries whereas 34.8% due to periodontal disease, 12.04% due to impactions, 4.4% for prosthetic purposes, 4.3% for orthodontic and 3.2% for other reasons. Advanced caries was the primary cause for extractions in male while impactions and orthodontic causes were the main reasons. Highest numbers of teeth were extracted due to advanced caries in patients from Nigeria (43.5%) and due to periodontal reason from patients of Bangladesh (37.1%) and Nepal (37%).

Key Words: Reasons for extractions among UNAMID troops.

INTRODUCTION

Prevention of tooth loss is important for social, functional, psychological and economical reasons. Dental and periodontal diseases are major public health problem in low income nations which can be prevented and treated if diagnosed early. In the developing countries and socially and economically marginalized communities, restoration of teeth may be expensive and extraction may be the easier alternative in terms of finances and time.¹

Causes for tooth extraction had large geographical and cultural differences in various countries. Caries appears to be the main cause of tooth loss in most countries as for example in New Zealand, Australia,

Canada, Finland, Norway, Sri Lanka, Scotland, Malaysia, France, and Sweden. In India, periodontal diseases are the main cause of dental extractions. In another group of countries, caries and periodontal disease seem to cause almost equal percentage of tooth loss as is the case in the United States of America.²

Patterns of dental diseases and treatment are changing; a decline in dental caries has been accompanied by a shift in emphasis from extraction to prevention that is for preserving as much tooth substance as possible. Such changes may have an effect on causes of removal of the teeth. Despite progress in prevention and operative techniques, teeth extraction remains an important part of therapy. Teeth may also be lost due to trauma, impaction, and prosthodontic treatment

¹ Major, Pak Field Hospital Level 3 Nyala Super Camp Darfur, Sudan.

² Senior Registrar Radiology Deptt, CMH, Rawalpindi,

³ Major. Senior Registrar Neurosurgery Deptt, CMH, Rawalpindi,

⁴ Brig, Dy Comd and Supervisor Operative Dentistry, Armed Force Institute of Dentistry, Rawalpindi.

For Correspondence: Major Dr Ajmal Yousaf . Consultant Dental surgeon Pak Field Hospital Level 3 Nyala Super Camp, Darfur, Sudan. Phone #: +249922409298. Email: dr_ajay77@hotmail.com. bangashajmal@yahoo.com.

and for traditional practices. Maasai tribe of Kenya practiced traditional extraction of lower incisors so as to create space for feeding of the individual in case of tetanus or febrile illness. Extraction of mandibular incisors is also associated with other Nilo-Hamitic pastoralist communities in Africa.³ Extractions may also be done as part of orthodontic treatment. For example, in a study among children in Nairobi, Ng'ang'a reported that orthodontic treatment accounted for 13% of extractions.⁴ Congenitally missing teeth have also been reported as main cause of missing teeth among the Kenyan population.⁵

Surveys to determine the reasons for tooth extractions have been carried out in many countries; England,⁶ Wales,⁷ Japan,⁸ Kuwait,⁹ Nigeria,¹⁰ Hongkong,¹¹ Norway.¹² But to the best of author's knowledge there has been no recent study regarding the current reasons for dental extractions in multinational patients at one time and in similar conditions.

The present study was designed to examine tooth mortality in a hospital where patients of different countries with almost equal level of education and socioeconomic condition used to come for treatment. The various causes and patterns of tooth loss in the population may help give an indication as to the levels of oral hygiene, dental health awareness and an insight into the magnitude of dental problems and their management. Such data may also be of value to the National Oral Health Planners for laying out strategies to improve dental health care delivery in the country, hence the purpose of this study.

METHODOLOGY

A cross sectional study was conducted in a sample population of patients aged from 17 to 55 years attending the Dental Department of Pakistan Field Hospital Level 3 (PFH Level 3) Deployed by UNAMID at Nyala Darfur Sudan from Jan 2011 to May 2012. After taking informed consent patient data were recorded in a proforma including patient name, ID number, age, gender, nationality, medical and dental history including history of visits to dentists, smoking, oral hygiene, dietary and para-functional habits, number of missing/extracted teeth and reason for extraction which were assigned six groups; caries and its sequel, periodontal diseases, impaction, prosthetics, orthodontics, and other reasons which includes trauma, extrac-

tion due to traditional reasons, patient wishes and others. Findings of existing radiographs were also recorded to see the severity of dental caries and periodontal disease. New radiographs were taken if required.

Data collected were statistically analyzed by SPSS version 16. Percentage for various groups of reason for extraction was calculated as a whole and for individual country and for male and female patients separately and are shown in table and graphs.

RESULTS

1500 subjects, 1050(70%) male and 450(30%) female, aged from 17 to 55 years with mean age of 31 years (SD 3.5) visiting dental OPD of PFH Level 3 were selected. The study sample comprised of 302(20.1%) patients from Nigeria, 232(15.4%) Egypt, 145(9.6%) Pakistan, 121(8.06%) Bangladesh, 110(7.33%) Sierra Leones, 97(6.46%) Tanzania, 94(6.26%) Nepal, 92(6.13%) Ethiopia and 307(20.46%) from other countries which included china, Jordan, international UN staff and IDPs. Graph 1 shows overall percentage of different causes of extraction of teeth. Graph 2 and 3 provide percentage of causes of extractions for male and female separately. Table 1 shows percentage of reasons for extraction in different troops contributing countries to UNAMID.

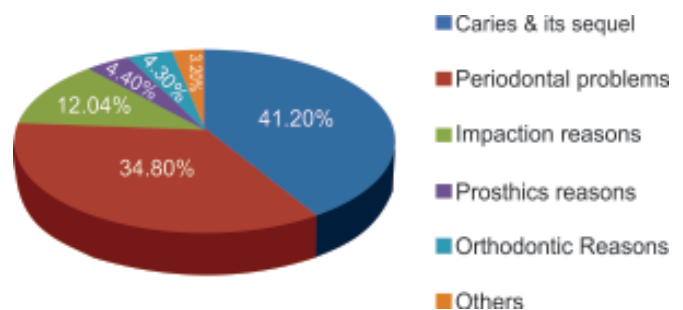


Fig. 1: Reason for Extractions

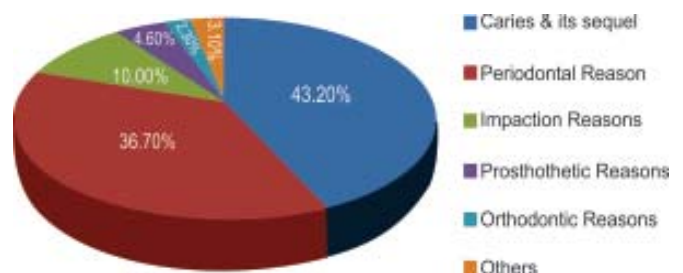


Fig. 2: Reasons for Extractions in Male

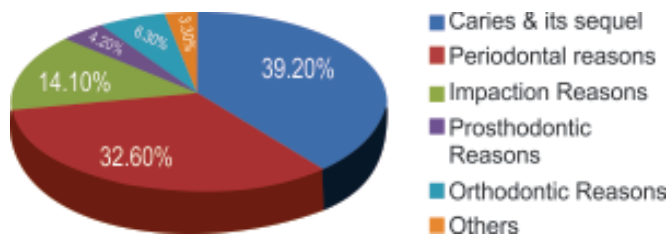


Fig. 3: Reasons for Extractions in Female

DISCUSSION

Comparison among studies seems interesting, but one must be cautious in interpretation because of cultural differences and the dental services available in different countries. Care is needed when comparing results of independent studies carried out at different points of time as various sources of bias may invalidate the comparisons.^{6,9} Since it was difficult or impossible to control adequately potential confounding factors, the comparisons have been restricted to marked differences and obvious time trends.¹³

Several studies investigating the reasons for teeth extraction report predominance of carious and periodontal diseases in different countries.^{2,9} There has been considerable variation in their findings, particularly with respect of whether caries or periodontal disease was the most important cause of tooth loss. The figures for caries, as a cause for extraction, vary from 26% in India to 87% in other countries.¹⁴

The results for this survey demonstrate that in the sample population of different countries, extensive caries was the leading reason for extraction accounting for 41.2% of the teeth lost. This finding is consider-

ably lower than 47.5% found in England,⁶ the 59% reported in South Wales,⁷ 55.4% in Japan,⁸ 49% in France,¹⁵ Scotland 51%,¹⁶ Germany 49.4%,¹⁷ Saudi Arabia 62%,² Kenya 53%,⁵ and Pakistan 59.8%.¹⁸ Indeed this may be explained with the very encouraging and continuing decline in dental caries activity of the teeth among populations of even developing countries like included in our survey. The results of this study were considerably higher as compared with the prevalence of 35% in Norway, 20.7% found in the western regions of Germany and 21% in U.K.^{17, 19, 20.}

Periodontal diseases as a cause of extraction ranged from 5% in other countries to 66% in India.¹⁴ In the present study periodontal diseases were the second most common cause of tooth loss accounting for 34.8% of the teeth extracted. This finding is in accordance with the studies done by Chestnut et al and Reich et al which investigated reasons for extraction of permanent teeth and showed that periodontal diseases are the most frequent cause of tooth loss after caries.^{16, 17} But periodontal problems as cause of extraction in this study is higher than those reported in Germany 27.3%,¹⁷ France 32.4%,¹⁵ Saudi Arabia 19%,² Kenya 28%¹⁷ and in Pakistan 23.2%.¹⁸

Our result for impaction was 12.04% which is lower than that in Germany 14.7%,¹⁷ and greater than reported in Jordan 10.1%.¹⁸

Extractions for prosthetic reasons varied from 2% in India to 34% in Sweden. Reason is 4.4% in this study which is comparable to that in Jordan (4.1%)¹⁸ but lower than that recorded in Germany 11.2%.¹⁷

TABLE 1: REASONS FOR EXTRACTIONS IN PATIENTS FROM DIFFERENT COUNTRIES

Causes/ countries	Nigeria	Egypt	Pakis- tan	Bangla- desh	Sierra Leones	Nepal	Tanza- nia	Ethio- pia	Others
Caries & its sequel	43.5%	42.1%	40.8%	40.1%	40.8%	39.9%	42.5%	41.2%	40%
Periodontal problems	31.2%	34.4%	36.0%	37.1%	33.0%	37.0%	33.4%	35.1%	36.2%
Impaction reasons	13.2%	11.9%	11.2%	10.8%	13.8%	11.2%	12.9%	12.2%	11.5%
Prosthetic reasons	5.1%	4.0%	3.9%	3.8%	4.8%	4.1%	4.9%	3.8%	5.2%
Orthodontic reasons	4.9%	5.2%	4.2%	4.1%	4.2%	3.9%	3.9%	4.0%	5.0%
Others	2.1%	2.45%	3.91%	4.01%	3.48%	3.92%	2.41%	3.71%	2.1%

For orthodontic reason the results of this study (4.3%) are comparable to that in Germany 4.1%¹⁷ and Saudi Arabia 4%² but less than that in France 8.4%¹⁵ and greater than that in Jordan (2.5%).¹⁸

For other reasons of extractions result of the present study was 3.2% while in Germany it was 2.9%.¹⁷ and in Kenya 12%.⁵

Results of this study show that male had higher number of extractions due to carries than female (39.2%). This is in accordance with those reported by Janjua OS¹⁸ and Farsi JMA.²

Within the limitations of this study, it can be concluded that advanced dental caries and periodontal disease were the leading causes of tooth loss in the study population.

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