ANALYSIS OF REFERRAL PATTERNS AND HEALTH CARE WORK FORCE (DENTAL SURGEONS) IN AFID

Syed Gulzar Ali Bukhari, Chaudhry Muhammad Usman, Afeefa Ehsan, Nausheen Aziz

Combined Military Hospital Lahore/ National University of Medical Sciences (NUMS) Pakistan

ABSTRACT

Objective: To determine the disease pattern in AFID Rawalpindi.
Study Design: Cross-sectional study.
Place and Duration of Study: Armed forces institute of dentistry (AFID) Rawalpindi.
Material and Methods: All the patients coming to outpatient department of AFID from 15 Mar 2009 to 31 Mar 2009, during the study period were included in the study. 1398 patients under-went complete clinical examination and personal interview.
Results: A total of 1398 subjects with average age 31.98 years (SD± 13.96), 963 males (68.9%) and 435 females (31.1%) participated in study. Out of 1398 patients 613 (43.8%) were referred to operative department, 427 (30.5%) to oral surgery department, 100 (7.2%) to prosthetic department, 53 (3.8%) to orthodontic department and 205 (14.7%) to periodontics department indicating high caries prevalence rate. Available doctors are sufficient to manage 648 patients. Sixty-two more dental officers are required for better management of remaining patients.
Conclusion: Substantial proportions of patient's referral to combined periodontal and operative department at AFID shows trend towards conservative dentistry in Pakistan Army. It also means more and more patients requiring specialized treatment thus increasing the work load manifold, which requires more dental officers.

Keywords: Caries, Workforce.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

During recent years there has been dramatic increase in work load of dental surgeons globally and caries is the most common dental disease[1]. There is a shift towards conservative dentistry in Pakistan Army as well.

Looking at the pathogeneses; caries is both diet-dependent and fluoride-mediated. It is amenable to prevention and management at the individual and population levels through expert dental procedures[2,3]. Therefore, the extent and severity of its consequence for individuals, communities, and nations vary by the availability and balance of these factors. Although caries is a disease that manifests throughout the lifespan, prioritizing children for prevention is appropriate because caries is first established in early childhood and plays out across the lifetime[4,5].

The data from this study will provide basic information of prevalent dental conditions that are required for appropriate planning of dental services. Planning health promotion and preventive strategies along with the dental services according to the treatment need and work load on dental officers.

MATERIAL AND METHODS

This study was carried out at AFID Rawalpindi from 15 Mar to 31 Mar 2009. Sample size included of total 1398 subjects who reported in the morning timings to the diagnostic department of AFID. Patients reporting in evening practice timings and in emergency were excluded. Inter department referrals are not included in this study.

The oral examination was carried out by six trained house surgeons in a well facilitated environment of the diagnostic department, under supervision of a resident in oral and

Correspondence: Dr Chaudhry Muhammad Usman, Oral Surgery Department, 28 MDC CMH Lahore Pakistan
Email: usman.chy@gmail.com
Received: 28 Feb 2011; revised received: 21 Mar 2014; accepted: 17 Mar 2014

maxillofacial surgery. The oral exam was carried out after taking history (including demographic-data) of the subject. Each patient was examined supine with the examiner seated behind and data recorded by a trained assistant. Diagnosis was visual with a plain mouth mirror used to assist visibility and cotton rolls were employed to remove any plaque or debris, where necessary, all teeth and surfaces were examined for caries using the British Association for the Study of Community Dentistry (BASCD) criteria[3] and scoring system.

Data were analyzed using SPSS (version 17). Mean and standard deviation (SD) were calculated for quantitative variables i.e. age. Frequencies and percentage were computed for qualitative variables like gender, referral to operative, oral surgery, prosthodontics, orthodontics department and dental conditions like caries, gingivitis/periodontitis, soft tissue lesions and other multiple oral problems.

RESULTS

A total of 1398 subjects 963 males (68.9%) and 435 females (31.1%) were studied. Average age of patients was 31.98 years. Out of 1398 patients 613 (43.8%) were referred to operative department, 427 (30.5%) to oral surgery department, 100 (7.2%) to prosthetic department, 53 (3.8%) to orthodontic department and 205 (14.7%) to the periodontics department. Doctors are required for better management of remaining 750 patients. If we consider department wise; 38 doctors are needed in operative department, 16 in oral surgery department and fourteen more doctors are needed in periodontics department. Prosthodontics and orthodontics department have sufficient doctors for their patient load table-I.

DISCUSSION

This article reports upon the prevalence of most frequent dental condition being dental caries (36.6%), as 613 (43.8%) patients were referred to operative department of AFID which is similar to the globally investigated caries prevalence rate. WHO reports carries prevalence in school-age children at 60-90% and is virtually universal among adults in the majority of countries. WHO has attributed these differences to the relative availability of simple sugars in diet, to the availability of fluoride and dental treatment[2] table-II.

Table-I: Distribution of patients and doctors in different departments.

Departments	Patients	Doctors (military and civil)	Total patients that can be seen	Patients left	Doctors needed
Operative	613	13	156	457	38
Osd	427	19	228	199	16
Prosthodontics	100	12	144	nil	nil
Orthodontics	53	7	84	nil	nil
Periodontics	205	03	36	169	14
Total	1398	54	648	750	62

Table-II: Description of disease pattern.

	Frequency	Percentage
Caries	512	36.6
Periodontitis/gingivitis	79	5.7
Soft tissue lesions	14	1.0
Multiple problems	793	56.7

A total of 427 (30%) patients were referred to oral surgery department for extractions out of which; 1% for soft tissue lesions and 56.7% with other multiple problems. Most extractions were because of caries which corresponds to other studies i.e. 61.50% as mentioned in a study carried out at Khyber College of Dentistry, Peshawar and 49% according to French Cahen PM et all studies[5-7].

Third in our study were periodontal lesions, 5.7% periodontal conditions were third high risk conditions according to this study as 205 (14.7%) patients were referred to the Periodontics department. The prevalence of periodontitis at U.S for the NHANES 111 1999-2000 was 7.3%[9]. Gingivitis, the mildest form of periodontal disease and Periodontitis results in loss of connective tissue and bone support and is a major cause of tooth loss in adults. Twenty eight percent extractions were due to periodontal diseases according to studies carried out at Hong Kong[10], genetic and environmental factors, especially tobacco use, contribute to the cause of periodontal diseases[11]. Patients referred to prosthodontics were 100 (7.2%) and to orthodontics department were only 53 i.e. 3.7%.

WHO recommends oral health interventions that are; (1) develop oral health systems that equitably improve oral health outcomes, respond to legitimate needs, and are financially fair, and (2) integrate oral health into national and community health programs and promote oral health in public policy.

The 2001 U.S Surgeon General's invitational Workshop on Children and Oral Health included (1) start early and involve all who come in contact with young children and their families; (2) assure competencies of all providers; (3) take public action through coalitions; (4) maximize utility of sound science; (5) grow and adequate and competent dental workforce[12].

A total of 43 military dental officers are present in AFID. The methods for estimating dental manpower requirements are outlined below:

Recommended rate of patient care is 14 patient per 8 hours[13,14]. An average dental patient requires thirty minutes for a procedure, and we have total six working hours in clinics. So two patients can be managed in an hour i.e.

- Patients seen / hour =2
- Total working hours=6
- 2 patients in 6 hours =12 patients / day by one doctor.

Increasing the number of officers means commissioning new dental units, upgrading the old ones and establishing more tertiary care centers like AFID; at least one in each province. There is no bar on numbers of spouses and children in our armed forces so dependent population is highly variable.

Keeping in view the ground reality that the mandate given to the dental officers in Pakistan Army is to provide basic dental treatment and prevention. Now if we consider the treatments like surgical tooth extractions, surgical endodontics, root canal treatment, crown and bridge work and orthodontics; these jobs consume human resource. The resources required and time needed for providing higher level of treatment to every patient attending dental clinic is not simply possible because of the fact of limited time factor. If we change our mandate from simple and basic dental treatment to higher dental care then the limitation of time factor can only be tackled by increasing dental units and dental manpower. The fourteen patients per dentist mean four extractions, four filling, two reviews and four other minor procedures. Increasing or allowing entitlement of higher level dental care to everybody will result to higher care to few selected lot on the cost of compromising basic dental treatment to our troops.

CONCLUSION

Substantial proportions of patient's referral to combined periodontal and operative department at AFID shows trend towards conservative dentistry in Pakistan Army. It also means more and more patients requiring specialized treatment thus increasing the work load manifold, which requires more dental officers.

CONFLICT OF INTEREST

This study has no conflict of interest to declare by any author.

REFERENCES

1. Qureshi S, Qureshi R. study of dental diseases in 12-year old children in Karachi, Pakistan oral and Dent. Jr 2004: 24: 205-8
2. Edelstein BL. The Dental Caries Pandemic and Disparities Problem. BMC Oral Health. 2006; 6 Suppl 1:S2.
3. Pitts, N.B. and Evans, D.J. (1997): British Association for the Study of Community Dentistry (BASCD) co-ordinated National Health Service surveys of caries prevalence 1985/6-1995/6. Community Dental Health 14, (Suppl 1), 1-5.
4. Moynihan PJ: The role of diet and nutrition in the etiology and presentation of oral diseases. Bulletinin of the world Health 2005; 83: 694-699.
5. Reisine ST, Psoter W: Socioeconomic status and selected behavioral determinants as risk factors for dental caries. J Dent Educ 2001; 65: 1000.
6. Hamissi J Ramezani GH Ghodousi A Prevalence of dental caries among high school attendees in Qazvin Iran Journal of India Society of Pedodontics and preventive Dentistry: 2008; 26: 53-55.
7. Shah SA, Khitab U,Chughtai AM, Khan SA. Cause of dental extraction among 2000 patients-a study conducted at oral and maxillofacial surgery unit, Khyber College of dentistry, Peshawar-Pakistan. Pakistan oral and Dent. J 2004; 24: 209-12
8. Cahen PM,Frank RM,Turiot JC.A survey of reasons of dental extractions in france. J Dental Res. 1985; 64: 1087-93.
9. Borrell L.N Burt B.A and Taylor G.W. Prevalance and Trends in Periodontitis in the USA: From the NHANES III to the NHANES, 1988 to 2000. J Dental Research 2005; 84: 924-930.
10. Cobert EF, Devis WI. Reasons given for tooth extractions in Hong Kong. Community Dental Health. 1991; 8: 121-30.
11. J Bergstrom, Tabacco Smoking and Chronic Destructive periodontal desease, Odontology 2004; 2, 139-140.
12. Edelstein BL: Forward to the US Surgeon General's Workshop on Children and oral Health, Ambulat Pediatr 2002; 2, 139-140.
13. Henderson WG. Measuring the Supply and demand for dentists in a population. Am J Public Health, 1976; 66: 70-2.
14. Solomon ES. The future of dentistry. Dent Econ 2004; (4 part1): 1-3.