

Oral health survey at an air base in Jordan

T.A. Rababa'h,¹ F. Jama'ni¹ and M.A. Al-Omari¹

استقصاء صحة الفم في قاعدة جوية بالأردن
طه اللاني ربابة وفلك جسامي ومحمد أحمد العمري

خلاصة : يهدف هذا البحث إلى تقدير مدى شدة وانتشار أمراض دواعم الأسنان والتسوس بين 507 من الأفراد الذين تتراوح أعمارهم من 15 إلى 44 سنة في قاعدة جوية عسكرية بالأردن . وباستعمال منسب الاحتياجات العلاجية لأمراض دواعم الأسنان في المجتمع ، وجد أن معدل انتشار هذه الأمراض يرتفع مع تقدم العمر . ولكن معدلات التسوس والتهاب اللثة ، وتكون اللويحات السنية ، كانت أعلى بدرجة مفرطة بين الشباب (من الفئة العمرية 20-24 سنة) . ولوحظ بصفة عامة ، أن معدل إصابة الأسنان بالتسوس والفقد والحشو أخذ في التصاعد ، وذلك اتجاه سبق أن لوحظ في دراسات مماثلة أجريت في بلدان نامية أخرى .

ABSTRACT The aim of this investigation was to assess the severity and prevalence of periodontal disease and dental caries in 507 subjects, ranging in age from 15 to 44 years, at an army air base in Jordan. Using the Community Periodontal Index for Treatment Needs (CPITN), it was found that prevalence of periodontal disease increased with age, but incidence of caries, gingivitis and calculus was alarmingly high in young adults (20–24 years). Overall, the rate of decayed, missing and filled teeth (DMFT) is rising, a trend that has been noted in similar studies from other developing countries.

Enquête sur la santé bucco-dentaire dans une base aérienne en Jordanie

RESUME Le but de cette enquête était d'évaluer la gravité et la prévalence des parodontopathies et des caries dentaires chez 507 sujets âgés de 15 à 44 ans dans une base aérienne en Jordanie. En utilisant l'indice des besoins de la collectivité en matière de traitement des parodontopathies (CPITN), on a trouvé que la prévalence des parodontopathies augmentait avec l'âge, mais l'incidence des caries, de la gingivite et du tartre se situait à un niveau alarmant chez les jeunes adultes (20–24 ans). De manière générale, le taux de dents cariées, absentes et obturées (DCAO) augmente - tendance qui a été constatée lors d'études similaires dans d'autres pays en développement.

¹Queen Alia Military Hospital, Royal Medical Services, Amman, Jordan.

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Introduction

Oral health is usually determined by the prevalence of caries and periodontal disease, the latter being one of the most widespread chronic diseases in the world. Information on the prevalence of these two diseases is a principal requirement in planning for an effective and preventive oral health service.

While industrialized countries are experiencing a decline in the rate of decayed, missing and filled teeth (DMFT), the incidence of dental caries in developing countries—where approximately 50% of the population is under the age of 15 years—is increasing rapidly. Jordan is a small country with a population of just over four million. The average family size is seven siblings, with the survival rate steadily improving. Due to the increase in population and the rise in DMFT, there is a fear that Jordan will encounter an explosion of dental problems commencing with the younger age groups.

Many studies of periodontal diseases in adults have been carried out all over the world, and are received, analysed and stored at the Global Oral Data Bank (GODB) at the World Health Organization (WHO) headquarters in Geneva. In Jordan, data on the frequency and severity of periodontal diseases is limited and sporadic. The purpose of this investigation was to assess the prevalence and severity of periodontal disease, as well as dental caries, in a group of air base soldiers and officers of the Jordanian army. We used the Community Periodontal Index of Treatment Needs (CPITN) as recommended by WHO [1-3].

Subject and methods

More than five hundred subjects (507) were examined, with ages ranging between 15 and 44 years. They were examined by

the same dentist at the dental clinic of the air base, while another trained dentist recorded the results and two dental assistants prepared the subjects and the instruments.

When recording the dental caries, the examiner assessed the suspected lesion both visually and using a sickle probe. When the probe stuck in the lesion because the lesion was soft, it was considered as carious; the tooth was then dried before further examination.

All the subjects were military personnel living under the same conditions, and were considered representative of the whole army. Inter-examiner reproducibility was 94%, and the CPITN periodontal probe was used in assessing the periodontal condition.

Results

The results were sent to the GODB at WHO headquarters in Geneva to be processed and analysed.

Table 1 shows the distribution by age group and mean number of sextants scored for the following indicators: healthy, bleeding, calculus, shallow pockets and deep pockets. No subject was healthy and the greatest at-risk age group for deep pockets was 30-34 years, comprising 14% of the whole sample.

Table 2 shows the type of periodontal treatment needs for the whole sample: 100% for oral health indicators (OHI) for the whole sample, an average 88% for prophylaxis and an average 3% for complex treatment.

Concerning the results of the dentition status, Table 3 shows the number and percentage of subjects with decayed permanent teeth and Table 4 shows the mean number of DMF permanent teeth by age group. Finally, Table 5 shows the distribution of subjects according to severity of fluorosis.

Table 1 Indicators of dental condition of 507 subjects by percentage and mean number of sextants affected

Age group	Subjects		Dental condition									
			Healthy		Bleeding or worse		Calculus or worse		Shallow pockets		Deep pockets	
	No.	%	%	MNS	%	MNS	%	MNS	%	MNS	%	MNS
15-19	20	3.9	0.0	0.8	20.0	5.2	35.0	2.0	45.0	0.8	0.0	0.0
20-24	276	54.4	0.0	0.9	17.0	5.1	23.2	2.4	59.1	1.2	0.7	0.0
25-29	101	19.9	0.0	0.8	10.9	5.2	13.9	2.8	74.3	1.4	1.0	0.0
30-34	71	14.0	0.0	0.9	8.5	5.1	21.1	3.1	64.8	1.6	5.6	0.1
35-44	39	7.7	0.0	0.7	5.1	5.3	20.5	3.9	71.8	1.8	2.6	0.1

MNS = mean number of sextants

Table 2 Treatment needs for periodontal conditions by percentage and mean number of sextants

Age group	No. of subjects	OHI (TN1)	Prophylaxis (TN2)		Complex treatment (TN3)	
		%	%	MNS	%	MNS
15-19	20	100.0	80.0	2.0	0.0	0.0
20-24	276	100.0	83.0	2.4	1.7	0.0
25-29	101	100.0	89.1	2.8	1.0	0.0
30-34	71	100.0	91.6	3.1	5.6	0.1
35-44	39	100.0	94.9	3.9	2.6	0.1

MNS = mean number of sextants

OHI = oral health indicators

TN = treatment needs

Table 3 Presence of active caries in permanent teeth by age group

Age	Subjects with caries		
	Total	No.	%
15-19	20	13	65.0
20-24	276	180	65.2
25-29	101	70	69.3
30-34	71	49	69.0
35-44	39	25	64.1

Discussion

In many studies, the prevalence of periodontal disease has been found to be 100% in adults 35 years of age and older [4-7]. Two studies have shown that only 3%-3.5% of 18-68 year old subjects had a completely healthy periodontium [8,9]. The differences in the findings may be due to several variables, such as different examination methods, severity of the disease in the population studied and differences in interpretation of find-

Table 4 Mean number of DMF permanent teeth by age group of total subjects studied

Age	No. of subjects	Total DMFT		Decayed		Missing		Filled	
		No.	Mean	No.	Mean	No.	Mean	No.	Mean
15-19	20	57	2.9	47	2.4	5	0.3	5	0.3
20-24	276	276	2.8	550	2.0	134	0.5	83	0.3
25-29	101	376	3.7	239	2.4	70	0.7	67	0.7
30-34	71	353	5.0	192	2.7	60	1.1	61	1.1
35-44	39	189	4.9	55	1.4	63	1.6	71	1.8

Table 5 Distribution by age according to severity of fluorosis

Age	Fluorosis code														Total
	0		1		2		3		4		5		1-5		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
15-19	20	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	20
20-24	266	96.4	2	0.7	3	1.1	4	1.4	1	0.4	0	0.0	10	3.6	276
25-29	96	95.0	1	1.0	1	1.0	2	2.0	1	1.0	0	0.0	5	5.0	101
30-34	69	97.2	1	1.4	0	0.0	1	1.4	0	0.0	0	0.0	2	2.8	71
35-44	39	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	39

ings. The subjects of our study represented a younger group of only 15-44 years, yet the prevalence of periodontal disease of any degree was found to be 100%.

The disadvantage of the CPITN is that the treatment needs neither describe the severity of the disease nor demonstrate the frequency of the scores. In this study, the percentage of people with deep pockets (> 6 mm) was very low (0.42%).

Data pertaining to periodontal conditions in a population are highly influenced by the number of teeth present. As a result of the reduction of caries in most industrialized countries, people will keep teeth over a longer time, consequently increasing the risk of periodontal disease. In the present study, where the number of teeth was comparatively high, the results show that gingivitis and calculus

are highly present in young adults. Pocketing became evident after 30 years of age, especially in the age group of 45 years and above, but deep pockets were common in the overall sample.

Using the information presented in the WHO document profiles of periodontal conditions in adults measured by CPITN, it is possible to compare the results of this survey for the age groups of 15-19 and 35-44 years with those of other countries, developed and developing [10,11]. For the age group 15-19 years, the mean number of sextants for the indicators of calculus and bleeding was similar to the results in Nepal, India, USSR (Tajikistan), Zaire, South Africa, Libyan Arab Jamahiriya and Morocco. For the age group 35-44 years, the percentages of subjects showing indicators of bleeding, calcu-

lus, shallow pockets and deep pockets were similar to those presented in Morocco, Pakistan, Saudi Arabia, Syrian Arab Republic, Brazil, Germany, Netherlands, India, Bangladesh and Thailand.

Unfortunately, there have been no regular surveys for different age groups carried out in Jordan to compare with our data. The available data are from the GODB for civilians.

Most of the data comes from 12-year-olds while our subjects are from a wider age range (15–44 years). In addition, most of these surveys were conducted in refugee camps where there is widespread poverty. Our study was of a specific group, i.e. soldiers who have a unified diet and lifestyle to a large extent. Even so, our data are largely

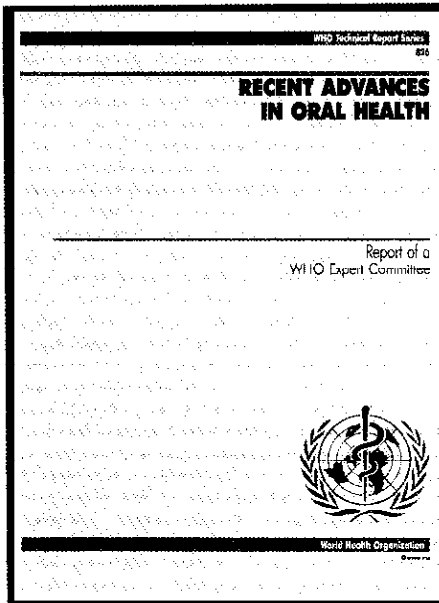
in agreement with the increased trend in DMFT shown in the data for developing countries in general.

To conclude, data from this study reveals that, in an older population group, the prevalence of different degrees of periodontal disease is greater than in younger groups, but only a few individuals suffer from deep pockets (> 6 mm). This study also reveals that the total amount of care needed cannot be provided by any single public health agency. Therefore, a preventive, not a restorative approach should be adopted, first through promotion of good oral hygiene practices, then by identifying the high-risk individuals or groups to more receive more effective oral health care [12–15].

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The report contains the deliberations and recommendations of a WHO Expert Committee convened to discuss recent advances in oral health care, to consider the improvements that may be expected in the near future, and to offer guidance on the adoption of new technologies. Progress in the prevention, diagnosis, and treatment of many oral conditions is reviewed. The advent of new materials and techniques permits a significantly less invasive approach to the problem. Many of the new techniques are particularly well suited to use in primary health care settings. The continuing problem of periodontal diseases, and the growing involvement of oral health care practitioners in the diagnosis and management of oral cancers and oral manifestations of other diseases, notably HIV infection and AIDS, are stressed.

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