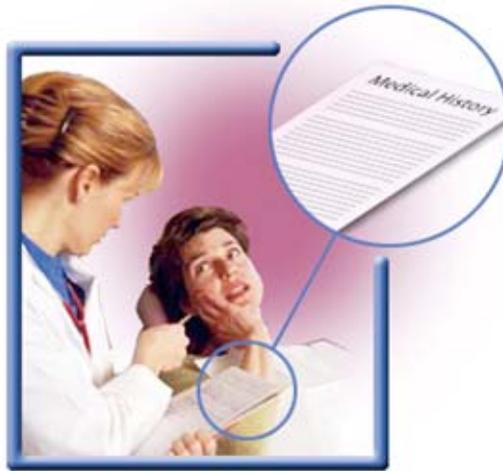# Prevalence of Medical Conditions Among Patients Attending Dental Teaching Clinics in Northern Jordan

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Abstract

Aim: This study was conducted to estimate the prevalence of self reported medical conditions among dental patients attending dental teaching clinics in north Jordan.

Methods and Materials: A total of 1,509 patients were included, of which 46.1% were males and 53.9% were females. All age groups were included and ranged between 14 and 78 years. The findings were analyzed in relation to age and gender.

Results: Overall, gastrointestinal disease was most prevalent (11.9%), followed by bleeding tendencies (9.3%), renal disorders (8.7%), respiratory disease (8.3%), and hypertension (6.4%). Only 3.2% of the participants reported having antibiotics prescribed for them prior to a dental procedure for prophylactic purposes.

Conclusion: Due to the high frequency of medical conditions, thorough evaluation of patients' medical and dental care histories should be a mandatory first step in their management.

Keywords: Medical conditions, systemic diseases, antibiotics, premedication

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Introduction

The relationship between oral disease and systemic disease has been extensively investigated.[1-9] Dental treatment may affect and be affected by systemic conditions that are varied and plentiful.[10-15] Of 4,365 dental patients surveyed by Cottone and Kafrawy,[11] 68.5% reported at least one significant medical problem. A higher rate of medical problems exists among older age patients[12-14] with hypertension being the most prevalent medical disorder.[15,16] Other reported conditions among elderly dental patients included cardiovascular disease, orthopedic problems, and vision deficits.[17-19]

Among patients at risk, bacterial endocarditis is one of the most serious complications of dental treatment. Tomas et al.[20] found six out of 87 patients with definite bacterial endocarditis developed the disease as a result of dental treatment. Another six developed it due to oral infections. This makes it mandatory such patients be recognized and given oral hygiene instructions and prescribed prophylactic antibiotics according to current protocols.

While several studies have been conducted in developed countries on the prevalence of systemic medical diseases among dental clinic patients,[10-21] relevant scientific data is lacking in many Middle Eastern countries. This study was conducted to estimate the prevalence of self-reported chronic medical conditions among patients attending dental teaching clinics in the north of Jordan.

Methods and Materials

This cross-sectional study was conducted at Jordan University of Science and Technology, School of Dentistry in Irbid, Jordan between the beginning of October and the end of December 2004. The data were collected through a personal interview conducted by the same dentist who completed a questionnaire (Figure 1) that had been piloted on 25 patients who were excluded from the study population. The study population was composed of 1,509 randomly selected patients using a systematic sampling procedure from specialty dental clinics which included conservative dentistry, prosthodontics, periodontics, orthodontics, oral surgery, and the initial treatment unit. All patients conveyed informed consent for participation in this study.

The questionnaire included information on age, gender, marital status, educational level, occupation, and the visited dental clinic. Patients were asked to provide a yes or no answer to questions about specific medical conditions including gastrointestinal disease, respiratory disease, anemia, hypertension, diabetes mellitus, kidney problems, hepatic disease, epilepsy, bleeding disorders, and cardiovascular disease. In addition, patients were asked whether antibiotics were prescribed prior to undergoing dental treatment because of having a chronic medical condition.

For statistical analyses, the Statistical Package for Social Sciences (SPSS) software (SPSS for Windows, version 11.5, Chicago, IL, USA) was used for data processing and analysis. Characteristics of subjects' variables were described using frequency distribution for categorical variables and mean and standard deviation for continuous variables. The Pearson x^2-test or the Fisher exact test were used as appropriate to assess the statistical significance of the difference in the prevalence of medical conditions between subgroups. P-values of less than 0.05 were considered statistically significant.

Medical Condition Questionnaire

Age (years): _____

Gender: __ Male __ Female

Occupation: _____

Marital Status:
__ Single __ Married __ Divorced __ Widow

Educational Level:
__ Illiterate __ Elementary/preparatory __ High School
__ Community College __ Higher Education

Clinic Attended:
__ Initial treatment unit (ITU) __ Conservative dentistry __ Oral surgery
__ Prosthodontics Periodontics __ Orthodontics __ Other

Medical Conditions
☐ yes ☐ no Gastrointestinal
☐ yes ☐ no Bleeding tendencies
☐ yes ☐ no Renal
☐ yes ☐ no Respiratory
☐ yes ☐ no Hypertension
☐ yes ☐ no Diabetes mellitus
☐ yes ☐ no Anemia
☐ yes ☐ no Cardiovascular
☐ yes ☐ no Epilepsy
☐ yes ☐ no Hepatic
☐ yes ☐ no Allergy

Antibiotic coverage for any chronic condition? _____

Figure 1. Medical conditions among patients attending dental teaching clinics in north Jordan (questionnaire).

Results

A total of 1,555 patients were randomly approached for enrollment in the study. Only 39 (2.5%) declined to participate. Seven women were ineligible leaving a final sample size of 1,509 (97.0% of those approached). Of this, 696 (46.1%) were males and 813 (53.9%) were females. Their ages ranged between 14 and 78 years with a mean ± SD of 36.7 ± 5.8 year. The demographic characteristics and the type of attended clinic are summarized in Table 1.

Gastrointestinal disease was the most prevalent with a rate of (11.9%). Bleeding tendencies (9.3%) were next followed by renal and urinary tract disorders (8.7%), respiratory disorders (8.3%), and hypertension (6.4%). Generally, 3.2% of participants reported having antibiotic coverage for prophylactic purposes. There was no significant difference between female and male patients in this regard. Gastrointestinal and respiratory disorders, bleeding tendencies, and anemia were more prevalent among females. In contrast, diabetes mellitus and cardiovascular disease were more prevalent among males (Table 2).

Bleeding tendencies and gastrointestinal disease were most prevalent among patients up to 40 years of age. Beyond the age of 40 years, hypertension, gastrointestinal disease, and diabetes mellitus were the three most prevalent conditions. For all medical conditions in question, the prevalence was significantly different between all age groups. Patients over 40 years of age were significantly more likely to receive antibiotic cover for prophylactic purposes (Table 3).

Table 1. The demographic characteristics and the type of attended clinic of 1,509 respondents.

Variable	N (%)
Age	
<20	531 (35.2)
20-40	528 (35.0)
>40	438 (29.8)
Gender	
Male	696 (46.1)
Female	813 (53.9)
Marital status	
Single	789 (52.3)
Married	720 (47.7)
Educational level	
Illiterate	72 (4.8)
Elementary/preparatory	585 (38.8)
High school	558 (37.0)
Community college	39 (2.6)
Higher education	255 (16.9)
Clinic	
Initial treatment unit (ITU)	321 (21.3)
Conservative dentistry	366 (24.2)
Prosthodontics	192 (12.7)
Periodontics	255 (16.9)
Orthodontics	222 (14.7)
Oral surgery	153 (10.1)

Table 2. Prevalence of medical conditions among patients attending dental teaching clinics in north Jordan according to gender.

Disease	Male (N=696) n (%)	Female (N=813) n (%)	Total (N=1509) n (%)	P-value
Gastrointestinal	69 (9.9)	111 (13.7)	180 (11.9)	0.025
Bleeding tendencies	48 (6.9)	93 (11.4)	141 (9.3)	0.003
Renal	63 (9.1)	69 (8.5)	132 (8.7)	0.699
Respiratory	42 (6.0)	84 (10.3)	126 (8.3)	0.003
Hypertension	48 (6.9)	48 (5.9)	96 (6.4)	0.431
Diabetes mellitus	45 (6.5)	30 (3.7)	75 (5.0)	0.013
Anemia	12 (1.7)	39 (4.8)	51 (3.4)	0.001
Cardiovascular	30 (4.3)	18 (2.2)	48 (3.2)	0.021
Epilepsy	6 (0.9)	9 (1.1)	15 (1.0)	0.229
Hepatic	6 (0.9)	6 (0.7)	12 (0.8)	0.787
Allergy	3 (0.4)	6 (0.7)	9 (0.6)	0.440

Table 3. Prevalence of medical conditions among patients attending dental teaching clinics in north Jordan according to age.
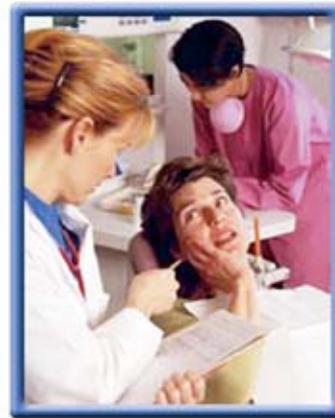
Disease	<20 (N=531) n (%)	20 – 40 (N=528) n (%)	>40 (N=438) n (%)	P-value
Gastrointestinal diseases	33 (6.2)	72 (13.7)	75 (17.1)	<0.005
Respiratory diseases	27 (5.1)	48 (9.1)	51 (11.6)	0.005
Bleeding tendencies	51 (9.7)	66 (12.5)	21 (4.8)	<0.005
Renal diseases	24 (4.5)	51 (9.7)	60 (13.7)	<0.005
Hypertension	3 (0.6)	3 (0.6)	90 (20.5)	<0.005
Diabetes mellitus	0 (0.0)	3 (0.6)	72 (16.7)	<0.005
Anemia	15 (2.8)	27 (5.1)	9 (2.1)	0.025
Cardiovascular diseases	6 (1.1)	12 (2.3)	30 (6.8)	<0.005
Epilepsy	3 (0.6)	12 (2.3)	0 (0.0)	<0.005
Hepatic diseases	0 (0.0)	3 (0.6)	9 (2.1)	<0.005
Allergy	6 (1.1)	3 (0.6)	0 (0.0)	<0.005

Discussion

This study was designed to assess the prevalence of certain medical conditions among dental patients attending dental teaching clinics in the north of Jordan. Our results differ from those of other studies regarding disease prevalence. Previous findings[20,21] indicate hypertension was the leading problem. In the present study hypertension ranked fifth, being preceded by gastrointestinal disease, bleeding tendencies, renal disorders, and respiratory disease. In contrast to most previous studies which focused on elderly dental patients, this study included those of all age groups.

Regarding the gender distribution of diseases, gastrointestinal and respiratory disorders, bleeding tendencies, and anemia significantly affected females more than males. Anemia was present in 4.8% of women and probably reflects a nutritional factor pertinent to the economic status of developing countries. The role of menorrhagia and hypermenorrhoea among women in the child-bearing age should be further examined.

According to the 1997 American Heart Association recommendations for prevention of bacterial endocarditis,[22] high-risk and medium-risk patients need antibiotic prophylaxis prior to certain dental procedures. The overall prevalence of patients needing antibiotic prophylaxis was 3.2% and evenly distributed among genders but with a tendency to increase with age. This finding did not correspond to those of Felder et al.[23] who identified a 42% need for endocarditis prophylaxis prior to dental procedures. Their sample source, size, and age distribution differ from this study and may have contributed to their high figure.

Our study results should be interpreted in the context of several limitations. First, for the detection of rare disease occurrences, a larger sample size is needed. Secondly, information bias as a result of the self reported nature of the study is a factor to be considered.

Conclusion

In conclusion, a high proportion of patients had a significant past medical history with gastrointestinal, bleeding tendencies, renal, and respiratory disorders being the most frequent conditions. A thorough evaluation of patients' medical history should be mandatory prior to commencing any form of dental treatment.

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