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Prevalence of Medical Conditions among Dental Patients in Benghazi

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ABSTRACT

Objectives: The aim of this study was to assess the prevalence of medical conditions and its relation to age and gender, among patients requesting dental treatment in private dental clinic, Benghazi University.

Material and Methods: This prospective study was conducted on a total of 1192 patients reporting to the private dental clinic of Benghazi University, period from September, 2014 to April, 2016. The patient's medical history was recorded on a predesigned preformat to find out the type of medical conditions in patients requiring dental treatment .The age range of the study population was from 15 years to 87 years, divided into seven age groups. Results were evaluated to see which medical problem is the most prevalent and to assess its relation to age and gender.

Results: This study showed that out of 1192 dental patients, 711 were females and 481 were males. 380 (31.88%) were with medical problems. The five most prevalent conditions in descending order were endocrine diseases which constituted 35.26%, cardiovascular diseases which constituted 27.89%, gastrointestinal disorders (14.73%), hematological disorders (5.79 %) and respiratory conditions (5.79%).

Conclusion: The results of the present study confirm that the prevalence of medical conditions is significant among patients requiring dental treatment. Therefore a thorough medical history and careful clinical examination is mandatory before any dental procedure. It seems absolutely essential for dental practitioners to take a detailed medical history prior to any therapeutic procedure, as certain medical conditions, if unnoticed, will lead to unfavorable consequences and /or repercussions.

Keywords: Prevalence , Medical Conditions , Dental care .

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INTRODUCTION

The advances in Medicine in recent decades, particularly with regard to early diagnosis and new therapeutic procedures, have contributed to an improvement in the quality of life of patients with chronic illness and have increased life expectancy in the general population. These improvements are also reflected in better oral health in a number of patients since they still retain their natural teeth into the old age. This increased the number of medically compromised patients attending dental clinics for treatment. Dentist should have enough information to manage these medically compromised patients [1-3]. To provide optimal dental care for the medically complex population, it is important to obtain a good medical history prior to any dental treatment. Dental patients do not always report their past medical history, usually because they do not consider it important or do not relate it to their dental problem [4]. A detailed medical history, which must include the patient's past and present history, and interrogation about the general state of health, are essential in order to detect patients with

relevant medical conditions and to avoid the risks derived from dental treatment [5].

There is no data concerning the prevalence of medically compromised conditions in dental patients from Libya. To the best of our knowledge, this is first small-scale study from Benghazi, in the eastern part of Libya.

MATERIALS AND METHODS

The study included 1192 patients attending private dental clinic at Benghazi University , during the period from September, 2014 to April, 2016. The patient's medical history was recorded on a predesigned preform to find out the type of medical problems. The variables recorded for each patient were the following: sex, age, history of medical conditions, including (endocrine, cardiovascular, haematological, gastrointestinal, renal, respiratory, pregnancy, neurologicsal, all*ergy,* and others). The patients were categorized into seven age groups: 15-25 years, 26-36 years, 37-47 years, 48-58 years, 59-69 years, 70-80 years and 81-91 years.

RESULTS

From the total of 1192 patients 380 patients (31.88%) were afflicted with medically compromised conditions (Figure 1). There were 711 female patients (33.43%) and 481 males patients (29.73%). The five most prevalent conditions in descending order were endocrine diseases which constituted 35.26% out of that 92.54% were due to diabetes mellitus, cardiovascular diseases which constituted 27.89% out of that 88.68% were due to Hypertension, gastrointestinal disorders (14.73 %), hematological disorders (5.79 %) and respiratory conditions (5.79%) (Table 1).

Diabetes mellitus constituted about 32.6% of all encountered medical conditions (57.3% of medically compromised were females and 37.1% of medically compromised were males), followed by hypertension which constituted about 24.74% s(23.6% of medically compromised were females and 26.6% of medically compromised were males) (Figure 2 and 3). The majority of compromised of both gender (30.79%) were in the 48-58 years.

	M+F	M	F
■ Coming	100%	40.42%	59.58%
■ Healthy	68.07%	70.27%	66.57%
■ Medically compromised	31.93%	29.73%	33.43%
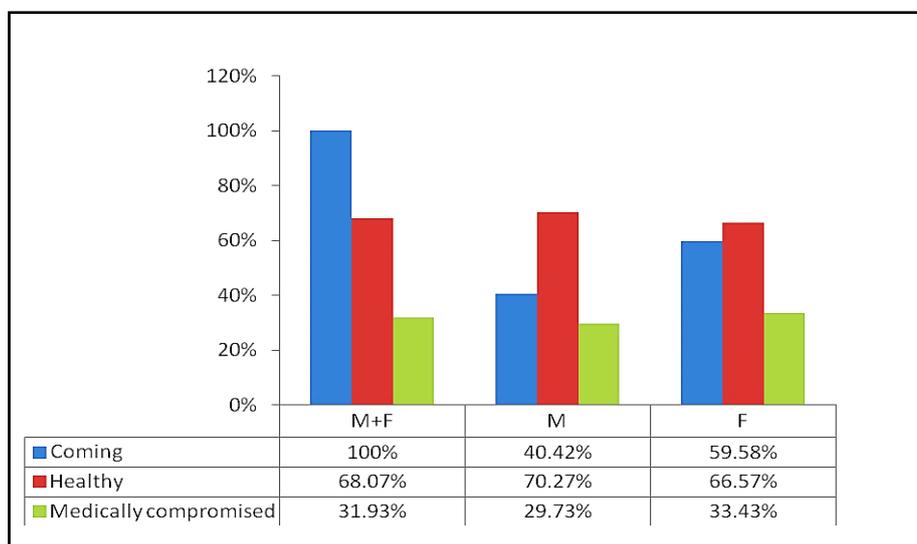
Figure 1: Comparison between healthy and medically Compromised patients among males and females

	M.C.P	endocrine	Diabetes	Cardiovascular	Hypertension	GIT	anaemia
F+M	100%	35.26%	92.54%	27.89%	88.68%	13.74%	5.79%
M	37.63%	39.55%	37.06%	43.40%	40%	26.79%	4.55%
F	62.37%	60.45%	42.74%	56.60%	60%	73.21%	95.45%
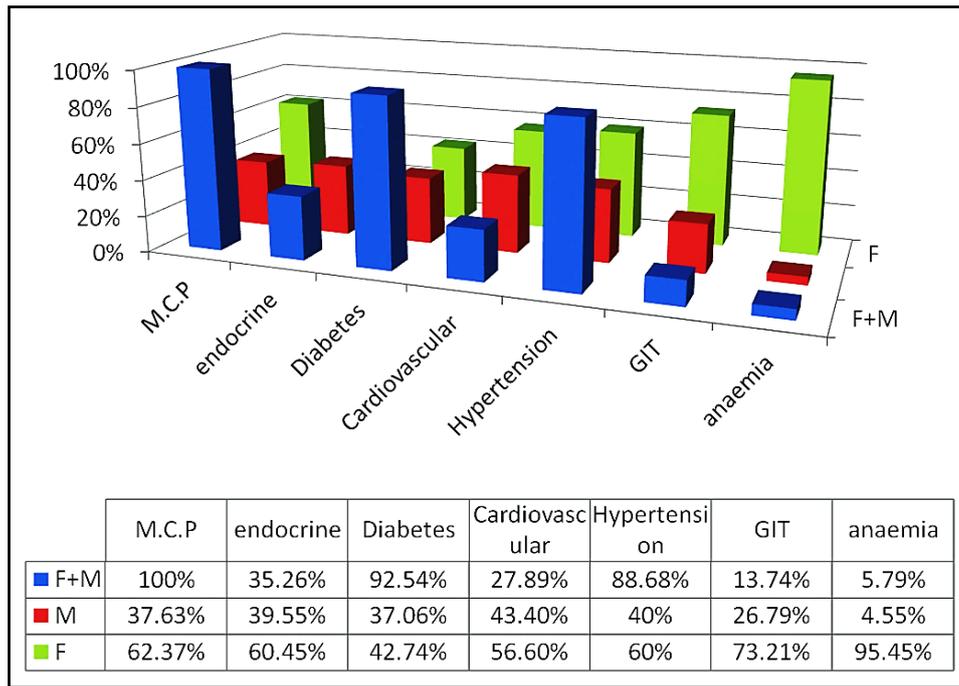
Figure 2: Demonstration of The five most prevalent conditions in descending order.

	M.C. Pt.	15-25 Y	26-36 Y	37-47 Y	48-58 Y	59-69 Y	70-80 Y	81-91 Y
M+F	100%	9.74%	17.37%	18.95%	30.79%	20.79%	3.95%	0.52%
M	37.63%	40.54%	24.24%	37.50%	37.60%	51.90%	100%	50%
F	62.37%	59.46%	75.76%	62.50%	62.39%	48.10%	47%	50%
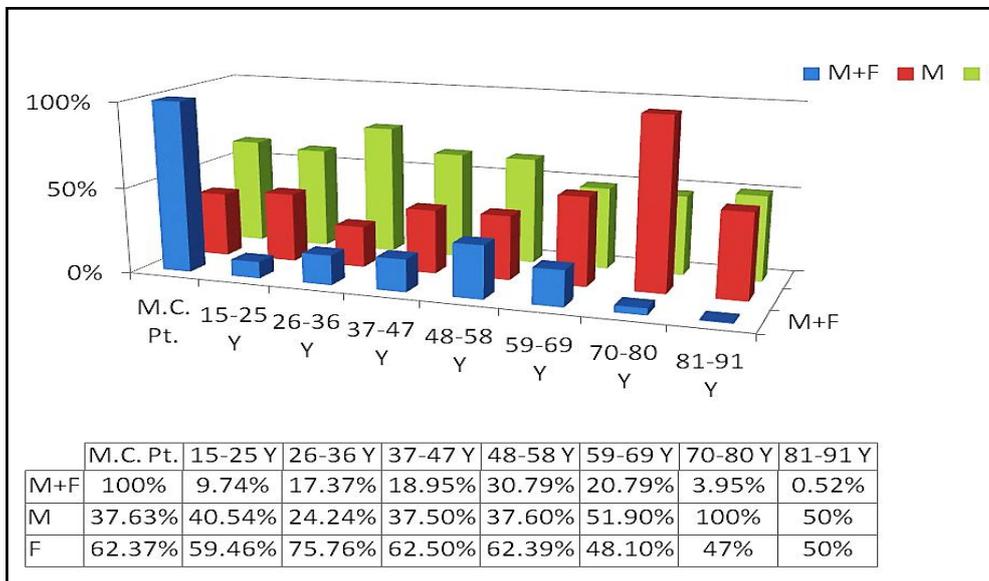
Figure 3*:* Comparison between healthy and medically compromised patients among the seven age groups.

Table 1: Disease categories and prevalence of diseases in 380 patients.

Disease category	Number	%	Type of diseases
Endocrine	134	35.2%	Diabetes m, hyper and hypothyroidism
Cardiovascular	106	27.8%	Hypertension,angina,myocardialinfracts,valve replacement, tetralogy of fallet and bypass surgery
Gastrointestinal	56	14.7%	Gastritis ,duodenal ulcer, celiac d. ,ulcerative colitis, hepatitis and others
Haematological	22	5.79 %	Anemia , thalassemia
Respiratory	22	5.79%	Sinusitis , bronchitis ,asthma ,tuberculosis
Neurologic &psychological	21	5.52%	Trigeminal n. ,stoke, Bells palsy, Parkinson d., depression ,epilepsy
Dermatological	7	1.84%	Lichen planus , vitiligo, psoriasis
Renal	6	1.57%	Haemodialysis, periotoneal dialysis, kidney stone, Kidney transplant , kidney removal
Autoimmune	7	1.84%	SLE, Sjogren syndrome ,Behçet's disease
Vit. D deficiency	9	2.36%	Vit. D deficiency
Tumors	12	3.16%	Squamous c.c. ,nasopharyngeal c.,breast c. , lymphoma
Allergy	11	2.89%	Penicillin, sulfa,aspirin ,bruffen
pregnancy	14	3.68%	Pregnancy

Discussion

The concept of taking a medical history, before any dental treatment is vital and mandatory for proper patients care. This study was carried out to assess the prevalence of certain medical conditions among 1192 dental patients attending private dental clinic, Benghazi University.

To elicit the patient's medical history, two different methods were used traditionally in dental practice. One is to take interviews and the other is patient self-reporting [6]. In this study history was taken by interview method. The results showed that 380 patients had one or more medical problems. Female:male ratio was 1.47:1, which reflects that females pay more attention to their oral health than males. This finding correlates with other studies [7-9].

The majority of systemic diseases tends to occurred in patients of both gender in their 40-60 years of age, this prevalence tends to increase with advancing age [10, 11]. In our study, we had higher prevalence rate of 30.79% systemic diseases in the age of 48-58 years compared with the other age groups. We believe that this age group have tendency to come to the dental clinic for their dental care. Compared to age groups (above 70 years), these older patients tend to have more complex medical conditions that could limit them from coming to the dental clinic for treatment.

Regarding the gender distribution of medical diseases our results revealed that, endocrine, hypertension, gastrointestinal and significantly

affected females more than males, but cancer, allergy and dermatological diseases are more common in males.

In our study, the prevalence of medically compromised conditions in patients requiring dental treatment was found to be 31.88%. This figure is not high when compared with other studies, showed that the prevalence of medical conditions in Thai 55.45% [12], 64.2% in elderly Japanese dental patients [13], while other studies is much less, in Brazilian dental patients to be 26% [14] and in Netherlands dental patients to be 28.2% [15].

The most commonly reported disease in our study was diabetes mellitus followed by hypertension, gastrointestinal, haematological and respiratory. Similar findings were reported by other studies [12,16], but in contrast to numerous other studies which have reported hypertension is the most common [16-18]. In the present study, cardiovascular diseases (hypertension) came second as the most prevalent medically compromised conditions in dental patients, similar toother studies [19]. Other study revealed reported gastrointestinal diseases as the predominant [15].

Diabetes mellitus and hypertension are common diseases that coexist at a greater frequency than chance alone would predict [14]. Among patients with diabetes mellitus in Jordan hypertension was seen in 70-72.4% (70.9% of males and 73.9 % of females) [20,21].

A recent study revealed the prevalence of coexistent hypertension and diabetes among Benghazi diabetic patients was 85.6% [22]. Our study revealed 77% of diabetic patients suffered from hypertension .

Diabetes, essentially a metabolic disorder, can give rise to serious complications if not factored in dental care. The risks associated with it include hypoglycemic attacks, delayed wound infection and secondary infection. Therefore, a diabetic patient requires thorough evaluation and careful treatment modification .

The co-existence of hypertension and diabetes and possibly point towards a common genetic and environmental factor promoting both diabetes and hypertension. Diabetic nephropathy is an important factor involved in the development of hypertension in diabetics, particularly type I patients. However, the aetiology of hypertension in the majority of diabetic patients cannot be explained by an underlying renal disease and remains essential in nature [23]. Insulin resistance,

increased tissue inflammation and reactive oxygen species production resulting in endothelial dysfunction, increased tissue renin-angiotensin-aldosterone system and increased sympathetic nervous system activity have all been implicated in this complex pathophysiology of diabetes and hypertension [24].

The lifespan of the average person has been significantly increased by the advances in medical technology, such that the dental patient is likely to have medical conditions which may alter the outcome of dental treatment. Also the practice of medicine and dentistry has been changing and will continue to change in the future. Safe treatment of these patients, needs prepared dentist with adequate knowledge of medicine [25].

Conclusions and Recommendations

Based on the results of this study, we conclude that 31.88% patients had medically compromised conditions. Diabetes and hypertension was the most prevalent medical conditions encountered in dental patients in the present study.

Safe dental treatment of medically complex patients, requires complete medical history and more knowledge of medicine from the dentist.

In dentistry, the curriculum may require continuous evaluation toward a more medically oriented dental education. Also continuing education courses should emphasize this subject as well.

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