



Determination of medical conditions afflicting patients visiting dental clinics: A population-based survey study

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Abstract

Introduction: The evaluation of medical history questionnaire in dental clinics is essential to formulate a proper treatment plan in medically complex patients. Besides, it is also a source of information for future correspondence. The percentage of people suffering from chronic medical illness has been steadily increasing. Thus, it is imperative that the dentist will encounter patients with chronic illness in routine practice. Pre-administered questionnaires are the most commonly used and reliable method of evaluating medical health of the visiting patient. The intent of the question pertaining to medical health must be modulated based on the dental treatment requirement. This study intends to evaluate such a similar questionnaire and derive percentages of chronic illness afflicting patients visiting the dental college in a span of 3 months.

Materials and Methods: A total of 725 patients were evaluated in the period of 3 months. The randomization of the sample was quantified by using a Tippets randomization table. A pre-tested questionnaire comprising of a list of medical ailments was used. A list of 16 ailments was included, and the answers were sought in monosyllables of yes or no. Besides, adverse habits were also evaluated as these are risk factors for the underlying systemic disease. The results were calculated by deriving simple percentage and then tabulated.

Results: A total of 725 subjects were evaluated. Majority of the respondents were in the older age group. The most common chronic illness afflicting the respondents was hypertension, followed by Diabetes.

Conclusion: Thorough evaluation of medical history is essential before beginning to start dental treatment. The analysis of the questionnaire in this study indicates toward the varied medical problems afflicting patients visiting the dental clinics. The dentist must be well conversant with the common diseases such as hypertension and diabetes in order to institute the correct treatment without affecting the general health of the patient.

INTRODUCTION

The practice of dentistry has evolved from one of a relatively narrow scope, defined by the boundaries of the oral cavity, to one of the comprehensive proportions in the recent past. It is known that a patient's oral health can greatly affect their overall health status and vice versa. We also know that many medical conditions have oral manifestations that are often the first indicators of systemic disease. In addition, there are many existing medical

conditions, which determine the success or failure of dental treatment. With these facts in mind, it is apparent that a patient's health history is one of the most important documents in a dental practice.

It is imperative for the dentist to obtain a detailed medical history of the patient beyond asking "Are you in good health?".^[1] Patients visiting the dentist are likely to have received medical intercession or are currently under treatment. There may be a set of patients who are on self-medication.^[2] In addition,

increasing numbers of medico-legal cases make it essential for the practitioner to have adequate medical knowledge of the patient, and to keep good records.

Good records are a rich source of data for health services and research. The dentist should, therefore, obtain a relevant medical history prior to dental treatment. The self-administered questionnaire has the advantages of providing a written document from the patient, and a chance for the dentist to get more information verbally, but it is not without pitfalls.^[2]

A variety of techniques has been tried and tested by the health care community to obtain relevant information that constitutes the medical history. There is not one universally accepted method; rather, individual approaches are custom made to specific needs.^[3] The nature of the patient's dental visit (i.e., initial, emergency, elective and continuous care, or recall visit) often dictates how the history is elicited and recorded.

The different formats are self-administered and pre-printed forms that are filled by the patient, direct interview of the patient by the clinician or a combination of both. All of these methods have some advantages and drawbacks. The use of self-administered screening questionnaire format^[2] is the most commonly used method in dental settings. Such questionnaire formats have been used in medical practices for more than 50 years of which the classic Cornell Medical Index is one.^[4] It contains 176 different questions. The greatest challenge in modern dentistry, as well as in medicine, is to use a comprehensive questionnaire that has enough number of questions to cover the essential information but is not too long to discourage a patient's willingness and ability to fill it.

Pre-printed self-administered health questionnaires are willingly available and standardized. Besides being easy to administer they do not require significant chairside time.^[5] They also pave the way for the clinician to a starting point to perform more in-depth medical queries. Unfortunately, these questionnaires are limited to the questions chosen on the form and are hence limited in scope. Answering these questions require a minimum level of comprehension. The questions on the form can be mis interpreted by the patient, resulting in imprecise information.^[2] As pre-printed forms cover wide areas without preferably focusing on particular problems relevant to an individual patient's precise medical condition,^[6] the use of these forms requires that the provider must have enough background knowledge to understand why the questions on the forms are being asked.^[7] In addition, the provider needs to comprehend that a given standard history form necessitates timely and suitable follow-up questions, especially when positive responses have been elicited.

The importance of evaluation of medical history has grown enormously in the recent past. This is due to the changing characteristics of patients visiting the dental office for treatment.^[8] Besides, the population seeking the dental treatment are a victim of chronic diseases and are on multiple drugs. In such a scenario, assessment of the medical history is essential. Knowledge of the medical status of the patient is essential in modifying the treatment protocol for patients

with special needs.^[9] Standard dental practice uses the self-administered, pre-tested questionnaire which helps to gather background medical information of the patient. In a developing country like India, the awareness of the urban population towards health has increased. Unfortunately, this same population has a tendency to either be affected or get effected by chronic illness. Evaluation of medical history questionnaire is one method for medical risk assessment. It is essential, as it will help the dentist recognize digression from normal general health status that may affect the dental treatment.^[10] Besides it would also help to make judgments on the risks of dental treatment.

Patients are generally unaware of the importance regarding revealing the medical information to the dentist. They do not acknowledge the amount of information the dentist needs to know or are reluctant to reveal certain specific medical information.^[5] Furthermore, experience in the dental practice has shown that communication between medical and dental practitioners is often inadequate, even when a patient is known to be attending both. Some medical practitioners may feel that confidentiality of patient records could be at risk from inter-professional consultations.^[11] In this practice, a patient's consent is always sought before these consultations take place, and no patient has so far refused. It may be that the risks to certain patients in dentistry are not clear to medical practitioners as there is little in medical training that highlights this. However, both dental and medical research have indicated the desirability of better communication between these professionals.^[12] More contact between dentists and general practitioners could occur through postgraduate meetings and combined presentations at local clinical clubs to the benefit of both professions.

This study aims to evaluate the medical history questionnaire in the dental clinics in urban Bangalore and to determine the medical conditions afflicting patients visiting the dental clinic.

Materials and Methods

A total of 725 patients who visited the Sri Rajiv Gandhi College of Dental Sciences and Hospital were selected in the period from May 1, 2013 to July 31, 2013. The sampling procedure was convenience sampling technique. The randomization of the sample was quantified by using a Tippets randomization table. A pretested questionnaire comprising of a list of medical ailments was used. A list of 16 ailments was included, and the answers were sought in monosyllables of yes or no. Besides, adverse habits were also evaluated as these are risk factors for the underlying systemic disease. The results were calculated by deriving simple percentage and then tabulated.

The questionnaire was divided into two parts. First was the demographic data. Second part comprised of a list of probable chronic diseases. This included rheumatic fever, congenital heart abnormalities, hypertension, asthma, epileptic seizures, diabetes, liver diseases, kidney diseases, tuberculosis, venereal disease,

allergies to anesthetics, antibiotics, lung disease, AIDS/HIV infection, pregnancy, bleeding disorder like anemia, radiation treatment.

Results

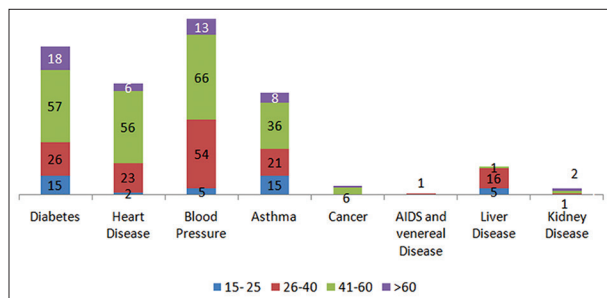
A total of 725 patients were evaluated in the period of 1 month (between 1st May 2012 to June 1, 2012). Majority of the diseases were more prevalent in the age group of 41-60 years [Graph 1]. A staggering 57% (413/725) of the respondents did not have any medical ailments, and a mere 33% (312/725) had an underlying medical ailment [Graph 2]. Hypertension and diabetes were the most common ailments with their percentages being above 10%. This was closely followed by the prevalence of asthmatics. With 11% (80/725), the prevalence of asthmatics was third highest after hypertension and diabetes. The prevalence of patients with liver was quite insignificant with 3% (22/725). However what was surprising was the prevalence of patients with cancer that was 1% (7/725) [Table 1]. It was found that some of the diseases were age related. For instance, hypertension and diabetes affects a protracted age group, i.e. between 15 and 60 years. Surprisingly, kidney and liver diseases affected a limited age group [Graph 3]. The prevalence of the diseases was concomitant with rising percentage of subjects with negative habits such as smoking and alcohol. This was a phenomenal 14% (101/725). 1.3% (10/725) of the subjects were aware that they are allergic to drugs. They were allergic most commonly to penicillin and sulfa drugs [Graph 4].

Discussion

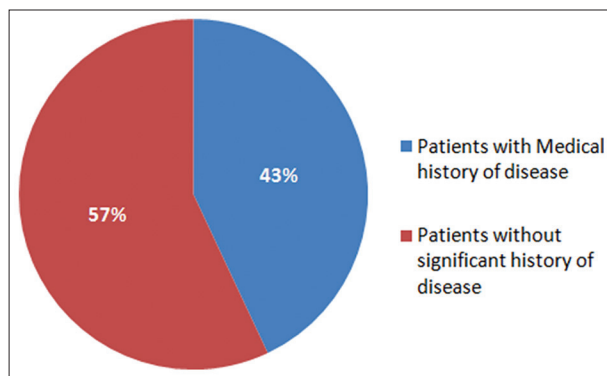
Obtaining a thorough medical history is an art of gathering information for assessing a patient’s health status. The medical history comprises of a systematic review of the patient’s chief complaint, a detailed history related to this chief complaint, information about past and present medical conditions afflicting the patient, pertinent social and family histories, and a review of symptoms by organ system.^[6] The medical history even includes biographic and demographic data used to identify the patient. An

Table 1: Table depicting percentage distribution of patients with respect to disease

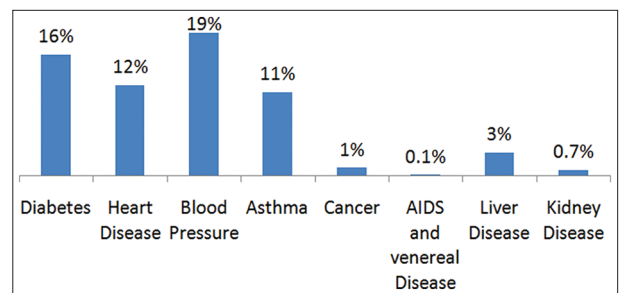
Patient history	Number of patients	Percentage
Diabetes	116	16
Heart disease	87	12
Blood pressure	138	19
Asthma	80	11
Cancer	7	1
AIDS and venereal disease	1	0.1
Liver disease	22	3
Kidney disease	5	0.7



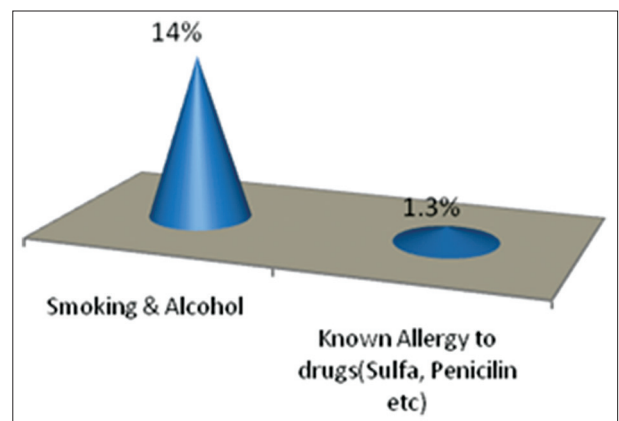
Graph 1: Distribution of patient disease by age group



Graph 2: Percentage of patients affected with disease



Graph 3: Percentage distribution of patients with disease



Graph 4: Patient distribution with negative habits and history of allergy to drugs

apt interpretation of the information collected through a medical history would achieve three important objectives:^[13] (1) It enables the monitoring of medical conditions and evaluation of underlying systemic conditions, of which the patient may be unaware of; (2) It provides a basis for determining whether dental treatment has any affect on the systemic health of the patient; and (3) it even provides an starting point for assessment of possible influence of the patient's systemic health on the patient's oral health or dental treatment.

The questionnaire used in this study was intended to only identify major medical illness of patients attending the dental clinic. It did not aim to evaluate the condition as a whole. Non-communicable diseases include a wide spectrum of diseases and often the geriatric population is a victim of it. It is estimated that the proportion of the burden of non-communicable diseases is expected to increase to 57% by 2020. In a study by WHO in 2012, majority of subjects afflicted with chronic diseases such as diabetes, hypertension, cancer and liver failure belonged to the age group of 50 years and above. The results obtained in the present study echoed the same. With a thorough medical history, the dentist can either detect an already diagnosed case or an occult case affecting the general health.^[14] Awareness among patients regarding their health is more in the urban areas compared with rural India. Since this study was conducted in urban Bangalore, majority of the respondents were aware of their medical ailments.

Hypertension and diabetes are the two most common diseases affecting the Indian population. The importance of hypertension and diabetes in dental practice cannot be discounted.^[15] Uncontrolled diabetes and hypertension call for change in the treatment plan. An estimated 50.8 million people are affected with diabetes in 2010. This number is going to steadily increase to around 87 million by 2030. This study was in complete agreement with the statistics, as the majority of the respondents in this study had hypertension and diabetes.

Smoking and alcoholism are the major contributors for chronic illness such as hypertension, diabetes, and cardiovascular diseases. They add to the burden of increasing the incidence of oral cancer also. According to health survey by WHO in 2012, 63% of male subjects had habit of smoking. Adverse habits such as smoking and alcohol consumption are a risk factor for cardiovascular diseases. The incidence of smoking is directly related to the prevalence of hypertension. Since the percentage of respondents addicted to smoking and alcohol was substantial, the number of subjects having hypertension also steadily increased. This clearly shows a direct link between the use of tobacco, alcohol, and hypertension.

Drug reactions are common with penicillin group of drugs. However, it is difficult to evaluate the history of allergy to such drugs. The probable reason is the lack of awareness among the patients and the lack of recalling a previous episode. Drug allergies are common hypersensitive reactions. The most common offending drug being penicillin. This is in complete agreement with our study wherein a substantial number of subjects were allergic to penicillin and sulfa drugs.

Chronic illness like liver disease, renal failure, and hepatic damage are age related illness. Diabetes and hypertension have do not follow this adage. Diabetes Type I is insulin-dependent diabetes affecting the younger age group. It is due to destruction of the beta cells of the islet of Langerhans in pancreas. Type II diabetes affects the elder age group due to peripheral resistance of tissues. The study revealed a wide latitude of age group affected by Diabetes, i.e. from 15 to 60 years. Causes of hypertension are many. Stress is a major cause of hypertension. The etiology of stress is irrespective of the age group. Our study also revealed a wide age range from 15 to 60 years affected with hypertension.

Conclusion

The significance of eliciting a detailed case history has been proven time and again. No one pattern of history taking is complete. The pattern of the questionnaire depends on the nature of treatment, which the patient intends to undergo. Evaluating the general health of medically complex patients is pivotal for treatment planning. The analysis of the questionnaire in this study indicates toward the varied medical problems afflicting patients visiting the dental clinics. The dentist must be well conversant with the common diseases like hypertension and diabetes in order to institute the correct treatment without affecting the general health of the patient.

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