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The Reporting of Supplement Use by Dental Patients on Their Medical History Questionnaire

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science

in Dentistry at Virginia Commonwealth University.

by

SARMAD BAKURI, DMD. BDS

Director: Dr. Thomas C. Waldrop, Professor, Director Graduate Periodontics, Department of  
Periodontics

Virginia Commonwealth University

Richmond, Virginia

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## Acknowledgment

I would like to dedicate my master project to my dad, who dropped his seat in his master program to work hard and support his family and to my mom, who have given support and light our way like a candle. To my wife who supports, encourages and holds me firm through our journey. To my lovely daughter Tiba. In addition to my research committee, especially Dr. Waldrop and Dr. Gunsolley for their support and help with my research project. Finally, special thanks to Mrs. Kimberly Hollaway, Miss.

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Abstract

THE REPORTING OF SUPPLEMENTS USE BY DENTAL PATIENTS ON THEIR  
MEDICAL HISTORY QUESTIONNAIRE

by Sarmad Bakuri, DMD

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science in Dentistry at Virginia Commonwealth University.

Virginia Commonwealth University, 2014

Major Director: Thomas C. Waldrop, Professor, Director Graduate Periodontics, Department of  
Periodontics

**Objectives:** The goals of the study were three fold. Estimate the prevalence of supplement use by dental patients. Determine if the design of a medical history form influences the prevalence of supplement use reported. Determine whether or not patients are aware of supplement side effects and interactions with medications.

**Methods:** Patients were randomly allocated to either a standard medical history form or the same form with additional questions about supplement use. After completing the initial forms, a survey containing questions about supplements was filled out by both groups. For investigating



differences between groups, logistic regression and analysis of variance were used depending on the type of outcome variable.

**Results:** Two hundred and nine patients participated in the study. The mean number of supplements reported by patients was influenced by the type of health history questionnaire given to the patient. Specifically asking about supplements versus not asking at all resulted in nearly double the number of supplements reported by the patient (mean of 1.53 when asked, 0.76 when not asked,  $p < 0.0001$ ). Patient age and income were related to number of supplements used per patient. The two oldest age categories (50–65 and >65) reported a mean number of supplements used of 2.82 and 2.72, respectively versus the youngest age group (<30 years old) which reported a mean of 1.05 ( $p < 0.05$ ). The highest income level (>\$75,000 per year) reported the lowest number of supplements per patient of 0.56 versus the other income levels ( $p < 0.02$ ), which reported mean supplemental use ranging from 2.28 to 2.71. Additionally, the majority of the subjects (69 %) were not aware of the side effects and interactions of supplements with medications.

**Conclusion:** Patients tend not to report supplement use on the medical history questionnaire unless they are directly asked and the majority of patients are not aware of interactions with medications. Patient income and age have an effect on the frequency of supplement use.

## INTRODUCTION

Dietary supplements include products used to supplement the diet including herbs, vitamins, minerals, and botanicals.<sup>1,2</sup> Supplements have been used in the medical field over the centuries and the advantages of their use were reported in the Chinese and Indian books. Supplement use evolved over the years in different parts of the world, and especially in the United States where the use of supplements dramatically increased after the FDA made significant changes to the regulation of dietary supplements in 1994.

The FDA used to regulate supplements under the category of food. In the past the FDA checked and evaluated the supplements before they reached the market in order to ensure that they were safe for consumption.<sup>3</sup> In 1994 Congress passed the Dietary Supplement Health and Education Act (DSHEA), thus establishing a totally new regulation for the use of dietary supplements.

Under the new regulation, the definition of “supplements” has been broadened, and supplements are no longer subjected to the old evaluation procedures prior to reaching the market place. The customer now depends solely on the manufacturer labels for safety. The truthfulness of information written on the products label is subject to the discretion of the manufacturer. Under the new law, after a supplement reaches the market the FDA can interfere only if it can prove that it is not safe for use<sup>4</sup>.

As a result of the DSHEA, the market share of dietary supplements has dramatically increased.

In addition to the DSHEA, the ease of use, the tendency of people to self-medicate, and the huge

effect that media has in promoting the use of supplements have cumulatively led to their tremendous increase in sales. A survey done by the National Center for Health Statistics in 2006<sup>5,6</sup> found that 19% of US adults consumed supplements in 2002. This was nearly double the amount reported in 1999, and the prevalence of their use jumped to 22% in 2006. Americans are spending tremendous amounts of money on supplements. According to a review done by Glisson and Crawford<sup>7</sup>, Americans spent twelve billion dollars per year on medications. A third of these dollars are spent on supplements. Sales of these products are steadily increasing by 15 % per year. According to O'Hara<sup>8</sup> one third of United States population uses supplements and spends more than \$3.5 billion annually, making the supplements market one of the fastest growing businesses in the United States.

As the use of supplements in the US continues to grow, concerns about the safety of these products have become an issue. The potential side effects of these products and the possible interactions with conventional FDA-approved medications have been closely evaluated by the medical society. These interactions may be additive, where the supplements increase the action of the drug, or antagonistic, or decrease the action of the drug. Supplement and drug interactions may result in either beneficial or adverse effects. The lack of adequate regulatory mechanisms and the dramatic increase in the use of supplements, along with the low rate of reporting by consumers, has given rise to serious concerns regarding their safety and efficacy. Therefore, a large number of studies have evaluated the possible interactions of supplements with conventional FDA approved drugs.

Many supplements interact with over the counter and prescribed medications. For example aspirin and non-steroidal anti-inflammatory drugs (NSAIDs) are among the most utilized medications in the United States for the treatment of mild and moderate pain<sup>9</sup>. NSAIDs in general, and aspirin specifically, decrease the synthesis of prostaglandin from arachidonic acid, which affects the cyclooxygenase enzyme therefore decreasing inflammatory response. A subsequent effect to that enzyme inhibition is interference with platelet aggregation. A survey of the literature indicates that some supplements have antiplatelet and anticoagulant properties.<sup>10,11</sup> Therefore, when patients use NSAIDs or aspirin along with supplements that induce antiplatelet activity, there is an obvious increasing risk of bleeding in the stomach and elsewhere in the body. In addition, some antiplatelet supplements have been reported to cause bleeding on their own (i.e., in the absence of NSAIDs or any other drugs). Gingko, ginseng, garlic, and ginger are the most common supplements that have been documented to possess antiplatelet activity, thus having the potential to cause an even greater increase in the risk of bleeding when combined with NSAIDs.

Patients get introduced to supplements through different routes including primary care physicians, friends, family, and media promotion. However, most patients are not aware of the potential side effects and drug interactions that these supplements may possess. According to Eisenberg<sup>12</sup> 31% of the patients who use supplements do so in conjunction with prescribed drugs, and 70% do not report the use of supplements to their physician. Patients generally do not consider supplements as a medications and do not report their use of supplements to health care provider<sup>13</sup>.

The lack of adequate patient awareness, dramatic increases in the supplement use, along with the serious documented side effects and drug interactions that these supplements may have, create the need for a study to evaluate the use of supplements in dentistry. Most of the studies report the prevalence of supplement use by patients in hospitals and physician clinics however, there are no adequate studies on the use of these products by dental patients. The vast majority of the dental information comes mainly from reviews and reports in the medical literature. Therefore, this present study will look at: (1) the prevalence of supplement use by dental patients; (2) whether or not patients report they are taking supplements on a medical history form; and(3) whether patients that are taking supplements are aware of the possible side effects and interactions with medications.

## MATERIALS AND METHODS

### Study design

Patient recruitment:

This study was reviewed by the Institutional Review Board at Virginia Commonwealth University and received exempt status. Patients were recruited from the School of Dentistry screening clinic at Virginia Commonwealth University (VCU). The purpose of this clinic is to determine the suitability of the patients for treatment at the Virginia Commonwealth University School of Dentistry clinics and is the initial visit to the clinics. Patients were randomly assigned to two different health history forms A and B. Forms A and B contained the exact same questions with the exact same sequencing except that form B had an additional question at the very end asking patients if they use any supplements. (Attachment 2,3)

When patients returned the health history form they were asked to participate in a survey study. Patients that agreed to participate in the study were given a three page survey form to fill out (Attachment 1). The survey form had questions about patient's demographic characteristics including age, gender, race and education. The survey also asked additional questions about current use of supplements. No data were used from patients that decline participation in the study.

All returned surveys were checked for completeness by the principle examiner (SB), and the participating subjects were provided with a free, one day parking pass as an incentive for

participating in the study. Inclusion criteria included any patient older than 18 years who was able to fill out the medical history form without aid of a parent or a caretaker.

Information (medical illnesses, current medications, and list of herbal supplements currently used) from the health history form were transferred immediately to the survey form, and the health history form was returned to the screening clinic. The survey was then entered into an electronic database. No personally identifiable information was put in the database, thus the research database was completely de-identified. The database was password protected and maintained in such a manner that only study personnel had access.

### **Survey form Design:**

The survey form collected information on the following:

- **Patient demographics:** Patient's age, gender, ethnicity, education level and income level.
- **Patient's herbal supplement use:** Patients were asked in the survey whether they were currently using herbal supplements. The patients who were using supplements were asked (yes or no) to identify supplements that they were using from a list of 25 commonly used supplements.(Table 1). Patients were also asked to provide a list of any additional supplements that were taking that they were not on that list. The dosage and frequency of use of each supplement was also collected.
- **Information related to herbal supplements use:** This section includes three questions that were related to the use of supplements. These questions included: (1) who prescribed or recommended the herbal supplements? (2) did the patient report the use of herbal supplements to their Dentist? (3) is the patient aware of possible complications

that may arise from the use of herbal supplements, and (4) is the patient aware of the possible interactions between herbal supplements and certain prescribed medications such as Warfarin, Plavix, Aspirin and Cyclosporine?

- **Information obtained from patient's health history form:** included patient's medical illnesses, current medications, and list of herbal supplements currently used.

### **Data analysis**

#### **Sample size justification**

Power analysis was done to determine sample size, with a sample size of greater than a 100 per group, the study will have power of 78.6% to yield a statistically significant result if the difference in proportions is 19% (specifically, 69% versus 50%). The study will be able to test for smaller differences in continuous variables. Note that this is a pilot study on this type of information, thus, once the actual variability of the data is determined in the study more precise power analysis can be done.



## Analysis

The goal of the study is to determine the knowledge of patients about supplements, the frequency and completeness of patients reporting supplements and demographic factors of subjects that are related to knowledge and reporting of supplement use.

The study utilized a tiered approach in collecting data. Two different medical histories were utilized (randomly allocated to patients). One medical history form asked only for information about use of medications. The second medical history explicitly asked for supplements used by patients. Those patients who agreed to be subjects of the studies were asked to list their supplement use by answering detailed questions about the specific supplements used. Thus, both the extent of the reporting of supplement use reported in a typical medically history form and the actual use of supplements were determined.

Demographic information on the subjects in this report was summarized as means  $\pm$  standard deviation for continuous variables and percentages along with 95% confidence intervals for categorical variables. Testing for reporting or not reporting of supplement between the two different types of medical histories was done by the chi square goodness of fit test. Testing for the frequency of reporting (i. e. the actual number of supplements reported per patient) between the three different methods of data gathering (two medical histories and the survey) was done with analysis of variance with Tukey's test for multiple comparisons. Finally, for investigating demographic variables

influencing the extent of the report of supplements, logistic regression and analysis of variance was used for the two different types of outcome variables.

## RESULTS

Two hundred and nine patients participated in the study. Patients in group A and B who agreed to participate in the study received an additional three page survey form after filling out their first medical history form. This survey form asked participants to the best of their knowledge to list all currently and previously taken herbal supplements. Then the participants were asked to answer questions about supplements recommendations and their knowledge of possible side effects and interactions caused by supplements use.

Of the individuals who agreed to participate in the study, 107 patients filled out form A (health history form with a question about medications use only) and 102 patients filled out form B (health history form with questions about medications and about supplements use). Five hundreds and two refused to participate in the study. The two groups (A and B) were balanced on the basis of race, age gender, education and income. When the two groups were evaluated there were no statistical differences between groups A and B (Table 1).

There was a statistically significant difference in the number of reported supplements between patients in group A and B. Patients in group A reported the mean supplement use per person of 0.76 versus 1.53 for group B (p value <0.05). In the survey form both reported even higher mean 3.1 for group A and 2.68 for group B (not statistically significant) (Table 2). Thus, patients report more supplements use when using more extensive and detailed questions about supplement use. This was clearly demonstrated when we compare the mean supplements reported in form A (with no question about supplements ) to form B with one question about

supplements use and with the survey form that asked the patient to discuss the supplements use in detail.

Patients had a low level of awareness about possible herbal supplements side effects and interaction with other medications (Table 3). Seventy nine percent (165 patients) from both groups were not aware of the possibility of increasing bleeding tendency as a side effect of certain supplements usage. Seventy four percent of them were not aware of possible inactivation of immune regulatory drugs by the use of (certain) supplements. A higher number of patients (84%) were not aware of the possible nervous system depression that may arise from supplements use and, finally, (69%) of the patients were not aware of the possible interaction of certain herbal supplements with anti-clotting medications resulting in either an increased or decreased effects of these medications.

Table 4 provides information on who recommended the use of supplements for patients in both groups. Forty three percent of patients had physician recommendations for the use of supplements, 12 % had recommendations from dentists and 22 % by family members. The highest percentage 51% was due to self-recommendations. One percent of patients reported that someone other than the listed categories recommended the supplements use, and one patient wrote Dr. Oz as the person who recommend the supplements use.

Table 5 presents analyses on how demographics and other factors were related to supplement use and/or how it is reported. Form type, comparing mean supplements reported in form A versus form B (where patients were asked additional questions about supplement use), patients that filled form B reported more mean supplements use than patients that filled form A (mean of 0.76 when patients were not asked about supplements usage {form A} versus 1.53 when asked about

supplements {form B}). Patient age was related to the reported frequency of supplement use with patients >65 years old having a mean supplement use of 2.83 versus 0.94 for patients <30 years old. Patient income also had a statistically significant impact on supplements use with patients with more >75K having a mean of 0.57 supplement use per patient versus patients <35K with a mean of 2.37. This suggests that the financial affordability of supplements by high income patients does not necessarily mean more supplement use. However, the sample size of the high income patients was only 10 patients.

## DISCUSSION

Our current study, to the best of our knowledge, is one of the first studies that has evaluated the use of supplements in a dental school setting. The study provides evidence that patients reporting the use of supplements was influenced by the type of health history questionnaire given to them. The study agreed with the published articles about supplements used in the medical field in terms of frequency of supplements use. The study that was done in Washington University by Kennedy<sup>5</sup> found that 38 million adults used supplements and Eisenberg<sup>12</sup>, in a frequently quoted national survey, reported a prevalence of herbal supplements use of 32-54% and varied based on different demographic factors. The current study also agreed with studies in the medical field that patients were not aware of possible side effects and interactions that may arise from the use of supplements. Most published studies focused on reporting the patients' feedback if the herbal supplements are safe or not. Planta<sup>18</sup> reported 86% of patients think that supplements are safe and our study to the authors' best knowledge is the first study to ask patients if they know the specific side effects and interactions<sup>19</sup>.

The data in the current study provided evidence that that patients with low socioeconomic status (low income) used more supplements than patients from high socioeconomic status (high income) which raises a question about the frequency of supplements use versus the affordability and accessibility of supplements. Our results were in agreement with the Planta<sup>18</sup> study where 69% of low income people (less than \$ 20,000) used supplements versus 14 % of people with higher income. Our study showed that the highest income level (>\$75,000 per year) reported the

lowest number of supplements per patient of 0.56 versus the other income levels that reported mean supplemental use ranging from 2.28 ( $p < 0.02$ ). However, in our patient sample the high income population was poorly represented with only 10 patients.

There was conflicting evidence about the use of supplements in different age groups. Our results did not come in agreement with some studies like the Eisenberg<sup>12</sup> national survey where patients aged 35-49 reported the highest percentage of supplement use (50%), followed by the older group which reported (39%) and finally the younger group at (41%). In the current study the two oldest age categories (50-65 and >65) reported a mean number of supplements used of 2.82 and 2.72 respectively versus the youngest age group (<30 years old) which reported a mean of 1.05 ( $p < 0.05$ ). However our current results were in agreement with other studies that showed that older Americans are consuming more supplements than other age groups.<sup>20</sup>

The main issue regarding supplements that we are facing daily in clinic practice is that the majority of patients don't report the use of supplements. Heck<sup>10</sup> found that 70% of patients fail to report supplement use to their health care providers and they are not aware of possible problems with the use of supplements. Abebe<sup>21</sup> discussed the various reasons for the lack of reporting on the use of supplements. He suggested that most patients think that supplements are not medications and thus are not reporting their use to health care providers.

Some supplements possess a list of serious and common interactions with most commonly taken medications, especially the blood thinning medications.<sup>22</sup> In the current study, 79% of patients were not aware of the possibility of increasing the bleeding tendency as a side effect of the use of certain supplements. In addition, 74% of the patients were unaware of possible inactivation of immune regulatory drugs with the use of certain supplements. A higher number of patients

(84%) were not aware of the possible nervous system depression that may arise from the use of supplements. Finally, although it has been shown by Norred<sup>23</sup> that 27% of surgical patients took supplements that may inhibit coagulation, 69% of the patients in the current study were not aware of the possible interaction of certain herbal supplements with anti-clotting medications.

While 43% of patients had physician recommendations for the use of supplements, 12 % had recommendations from dentists and 22 % by family members. This was in agreement with other studies where it was found that 22% of patients had friends recommendations and 19% had a relative recommendation. <sup>18</sup> An additional interesting finding in the current study is that the highest percentage of patients (51%) used supplements due to self-recommendations.

The most commonly used supplements by patients in our study were vitamins (which includes Vitamin A,E,C,D and multi vitamins) followed by fish oil and calcium, The herbal supplement echinacea was the most commonly used followed by ginseng and garlic. Most of published studies had a similar list of top ten most frequently used supplements, and the current study found very similar results to other studies, and in particular to the Mayo clinic study by Dergel<sup>19</sup>.

Documented cases of life threatening interactions arise from the unsupervised use of supplements, which should elicit a major safety concern to health care providers. Planta found that 69% of the health care providers lacked adequate education about supplements interactions and side effects.

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A case report by Crowe<sup>24</sup> demonstrated a relationship between taking large quantity of St. John's Wort and delayed emergence of the patient from general anesthesia. In addition, a report by Rose<sup>25</sup> described the occurrence of a spontaneous spinal epidural hematoma associated with platelet mal function following ingestion of excessive amount of garlic supplements. Miller,<sup>11</sup> in



a review article, proposed that potential hepatotoxicity may occur due to the prolong use of echinacea. Finally, a documented case of Stevens- Johnson syndrome was reported by Dega<sup>26</sup> in a 27 years law student following 3 days of taking an unspecified amount of ginseng.

In a conclusion, the dramatic increase in supplement use in the United States,<sup>12</sup> the low rate of patient reporting, and documented cases of serious side effects and drug interactions support the need for enhancing medical history documentation of supplement use. Health care providers should question all patients about the use of supplements and should be trained to identify the potential side effects and serious interactions.

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Table 1: demographics of patients in study groups A and B

Form type	A	B
Femal	74	58
Male	32	41
White	72	53
Black	28	38
Others	7	11
<30 years old	14	17
>65 years old	19	18
30-40 years old	19	8
40-50 years old	16	16
50-65 years old	39	42
< \$ 35,000	72	62
>\$ 75, 000	4	6
\$ 35,000 - \$75,000	20	22

Table 2: Differences in mean number of supplements reported by patients in form A, B and survey form

Form Type	Medical history form difference			Survey form difference	
	number of patients	Mean supplements reported	Std Err	Mean	Std Err
A(without supplement question)	107	0.76	0.12	3.1	0.28
B(with supplement question)	102	1.53	0.16	2.68	0.2



Table 3: Patients' awareness of possible side effect of supplements and their interactions with commonly prescribed medications

count	pts aware of interactions	pts not aware of interactions
Bledding	44	165(79%)
inactivation of immune regulatory drugs	54	155(74%)
nervous system depression	34	175(84%)
interaction with blood thinning medications	65	144(69%)

Table 4: Most common sources of recommendation for supplements use to the patients

Sources of recommendation for supplements use	
Count	# of patients and total Percentage
Dentist	26(12%)
Physician	90(43%)
Family	46(22%)
Self	105(51%)

Table 5: Demographic factors that produces statistically significant impact on the mean of supplements reporting

factor	mean
<i>Age</i>	
pts>65 years old	2.83
pts<30 years old	0.94
<i>Income</i>	
pts making < \$ 35 k	2.37
pts making > \$ 75 k	0.57
<i>Medical history Form type</i>	
Form A with (w/out S question)	0.76
Form B with (w S question)	1.53

Table 6: Most common used Non herbal and herbal supplements

Non Herbal Supplements

Fish Oil, Omega 3, or DHA Fatty Acid	78
Calcium	61
Vitamins (A,C,E)	41
Vitamin (B1-12)	36
Vitamin A,C,E	28
Multivitamin	24
Vitamin B1-B12	24
Vitamin D	21

Herbal supplements

Echinacea	15
Ginseng	14
Garlic pills or gencaps	12
Melatonin	12
Saw palmetto	10

Table 7: Most common supplements and their daily dosages, indications and possible contraindications/drug interactions <sup>14,15,16,17</sup>

Supplement	Daily Dosage	Usage indications	Contraindications and possible drug interaction
<b>Calcium</b>	1000-1500 mg	Menopause management, Bone health	Extra caution should be taken in patients with Hyperparathyroidism and Sarcoidosis
<b>Ginger (Zingiber officinalis) Root</b>	Suggested daily dose is 2 to 4 g is recommended three times a day.	Used as an anti-emetic, prophylaxis for travel sickness, have an Anti-inflammatory properties.	Precautions should be taken in individuals on anticoagulants and/or antiplatelet medications (may increase chances of bleeding)
<b>Garlic</b> (Allium sativum) Bulb	Suggested daily dosage is 1.5-2 g of garlic bulb per day or 400mg 3 times a day.	Garlic is popular for its effect in reducing various risks associated with cardiovascular disease	Garlic have active ingredients that has been reported to inhibit platelet aggregation. Precautions should be taken in individuals on anticoagulants .
<b>Ginkgo</b> (Ginkgo biloba) Leaf	Suggested daily dosage is 120 to 240 mg of dry extract 3 times a day.	Increase peripheral blood flow; Ginkgo has therapeutic effect in treating the	Precautions should be taken in individuals on anticoagulants (may increase chances of

		symptoms associated with early stages of Alzheimer's disease	bleeding). Also precautions should be taken in individuals on monoamine oxidase (MAO) inhibitors as ginkgo may alter the effects of these medications.
<b>Ginseng (Panax)</b> ( <i>Panax ginseng</i> ) Root	Suggested daily dosage is 1 to 2 g in 150 ml of water per day.	Enhances the mental and physical capacities, Enhances physical performance; increases energy.	Precautions should be taken in individuals on anticoagulants (may increase chances of bleeding).some documented reports show that It interact with Warfarin. Do not use in pregnancy. Ginseng Abuse Syndrome (GAS) may occur in prolonged use.
<b>Kava Kava</b> ( <i>Piper methysticum</i> ) Root	Suggested daily dosage is 100-250mg, 1-3 times	Kava is famous for its sedative and anxiolytic properties. It is effective in treating nervous anxiety and stress.	Contraindicated in patients with liver disease or liver impairment. Also contraindicated in patients with Parkinson's Disease (due to its effect as dopamine antagonism). Precautions should be taken in individuals on anticoagulants.
<b>Echinacea</b> ( <i>Echinacea purpurea</i> ) Flower, whole plant, root	Suggested daily dosage is 1 g cut root several times daily or 500mg, 3 times a day	Echinacea have a significant immune stimulation properties because of its effect	Not for use in individuals with chronic immunosuppression. Use with caution in

	for 1day, then cut it down to 250mg, 4 times a day.	on phagocytosis and it enhances the nonspecific T-cell stimulation Increasing non-specific immunity; used for the treatment of flu, colds, and tonsillitis.	individuals with kidney disorders. <sup>95</sup> <input type="checkbox"/> If used for prophylaxis, cycle 3 weeks on, 1 week off
<b>Fish oil</b> ( <i>Eicosapentaenoic acid</i> )	the AHA recommends a daily dosage of 1000 mg of EPA and DHA omega 3s	Very well known for its use in treating Hypertriglyceridemia, and atherosclerosis	GI disturbances, bloating and diarrhea.
<b>St. John's Wort</b> ( <i>Hypericum perforatum</i> ) Flowering buds	Suggested daily dosage is 300mg, 3 times a day.	St. John's Wort used in the treatment of psychological disturbances and depressive moods. It is also used as a topical agent for bruises and muscle soreness.	Extreme cautions should be taken when used with medications metabolized by the cytochrome P450. Also precautions should be taken in individuals on monoamine oxidase (MAO) inhibitors. Dizziness, nausea, and gastrointestinal upset. Another side effect is photosensitivity in susceptible individuals.
<b>Devil's claw</b> <i>Harpagophytum Procumbens</i>	Suggested daily dosage is 1.5 g per day.	Analgesic, also it is well known for its use in weight management since it enhances loss of appetite and weight loss.	Diarrhea, GI discomfort and possible arrhythmia, Precautions should be taken in individuals on anticoagulants (may increase chances of bleeding).
<b>Grape Seed</b> ( <i>Vitis vinifera</i> ) Seed/skin	Suggested daily dosage is 25-100mg, 1-3 times a day	Used in treatment of allergies and asthma. However it effect coagulation by	Precautions should be taken in individuals on anticoagulants (may increase chances of

		decreasing platelet aggregation.	bleeding).
<b>Saw palmetto</b> ( <i>Serenoa repens</i> )	1-2 g of cut fruit.	Urinary tract infections(UTI).and benign prostatic hyperplasia.	Vomiting, nausea, diarrhea, and headache
<b>Peppermint</b> ( <i>Mentha piperita</i> ) Leaf/oil	Suggested daily dosage is 1 tablet (enteric coated), 2-3 times a day	Oil is used to treat Irritable Bowel Syndrome. Also it is Well known for its use as digestive aid.	Precautions should be taken in patients with biliary tract obstruction, or severe liver damage.
<b>Bromelain</b>	Suggested daily dosage is 80-320 mg 2-3 times daily	Used to treat autoimmune Disorders, Inflammation, OA, and gout	Diarrhea, GI discomfort. May prolong coagulation and PT.
<b>Feverfew</b> ( <i>Tanacetum parthenium</i> )	Suggested daily dosage is 50 to 150 mg of dried leaves.	used for treatment of migraine and also as prophylactic treatment of headaches.	GI discomfort, Oral ulcers and allergic reactions.



Attachment 1: Survey form



*Department of Periodontics*

*Patient survey*

*Please circle the most appropriate answer in sections A,B and C*

**A-**

1- Age:    *less than 30*      *30-40*      *40-50*      *50-65*      *more than 65*

2- Gender:                      *male*                                      *female*

3- Ethnicity:    *white*      *Black*      *Hispanic*      *Asian*      *Others*

4- Education:    *High School*                      *Associate Degree*                      *College*

5- Income:    *less than 35 K*                      *35 K- 75K*                      *more than 75K*



Valerian		
Vitamins		
Ephedra		
Hawthorn		
Melatonin		
Cranberry pills or gels		
<i>Others:</i>		
<i>Others:</i>		
<i>Others:</i>		

### C-

#### **I-Who prescribed or recommended herbal supplements to you?**

Doctor

Dentist

Pharmacist

Friend

Self

Family member

Others (please specify) :

**2-Did you report the use of herbal supplements to your dentist?**

YES

NO

**3-Are you aware of any of the following possible complications that may arise from herbal supplements use? Please mark it down**

Increase risk of bleeding

YES

NO

Inactivating immune regulating drugs

YES

NO

Nervous system depression

YES

NO

Others (please specify):

**4- Are they aware of possible interaction between herbal supplements and certain prescribed medications like warfarin, plavix, aspirin and cyclosporine?**

Yes

No

**This page to be completed by the researcher:**

Medical illnesses:

Current medications

Herbal supplements:

## Attachment 2: Medical History Reference Form A

• Dear Patient,

If you would be so kind as to provide us with the following information regarding your medical history, it will help expedite your appointment (we will obtain a more comprehensive record of your medical history at a later time).

Please list any medical allergies

---

---

---

List any conditions requiring pre-medications (heart murmur, joint/valve replacement)

---

---

Have you ever tested positive for hepatitis B or C and/or HIV? If so, please list which you tested positive for, any when

---

---

List any overnight hospitalizations in the last ten (10) years \_\_\_\_\_

List any current medical conditions/diseases you have \_\_\_\_\_

List ALL current medications (name of medication, dosage, frequency, and for what reason you take it.

MEDICATION	DOSAGE	FREQUENCY	REASON FOR USE
------------	--------	-----------	----------------

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

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### Attachment 3: Medical History Reference Form B

• Dear Patient,

If you would be so kind as to provide us with the following information regarding your medical history, it will help expedite your appointment (we will obtain a more comprehensive record of your medical history at a later time).

Please list any medical allergies

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---

---

List any conditions requiring pre-medications (heart murmur, joint/valve replacement)

---

---

Have you ever tested positive for hepatitis B or C and/or HIV? If so, please list which you tested positive for, any when

---



List any overnight hospitalizations in the last ten (10) years \_\_\_\_\_

List any current medical conditions/diseases you have \_\_\_\_\_

List ALL current medications (name of medication, dosage, frequency, and for what reason you take it.

MEDICATION	DOSAGE	FREQUENCY	REASON FOR USE
_____			
_____			
_____			

List ALL current supplements (name of supplements, dosage, frequency, and for what reason you take it.

SUPPLEMENT	DOSAGE	FREQUENCY	REASON FOR USE
_____			
_____			
_____			

Figure 1: Patients distribution by income

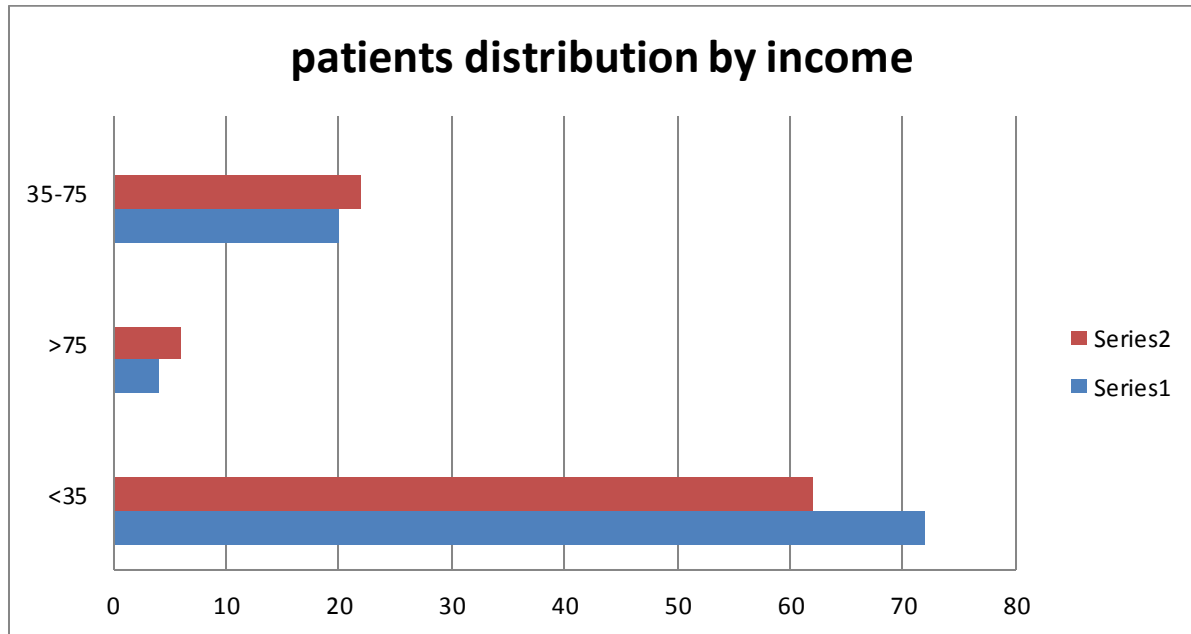


Figure 2: Patients distribution by age

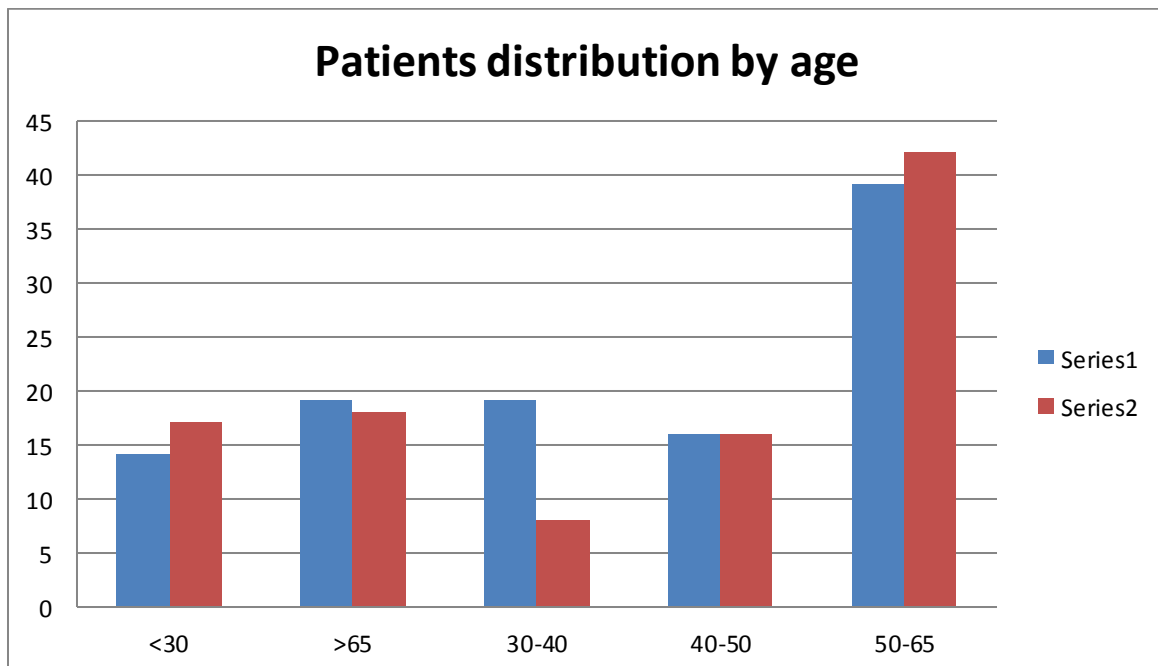


Figure 3: Patients distribution by gender

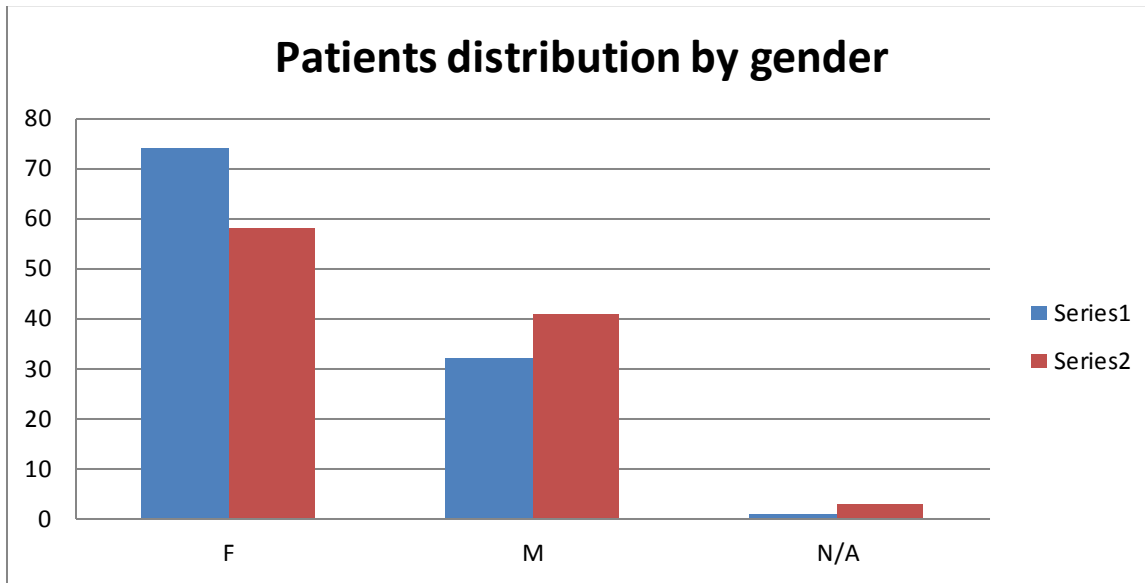
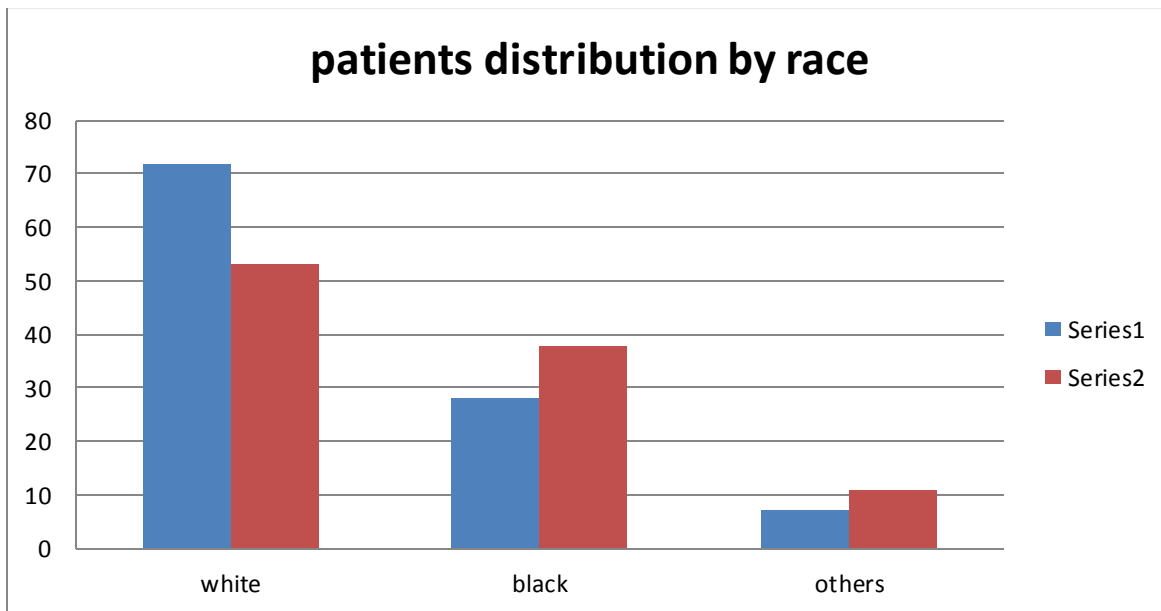


Figure 4: Patients distribution by race



Series 1: Health history form A

Series 2: Health history form B

