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Original Research Article

Concomitant use of dietary supplements and orthodox medicines among primary care patients due to non communication with physicians in a tertiary hospital in Uyo

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Abstract

The use of dietary supplements has recently increased worldwide. Because of non-communication, however, patients often do not disclose their dietary supplements use to their physicians. Danger exists because physicians give orthodox medications to patients who may be using supplements already in an attempt to promote health, prevent or treat diseases. The objective of this study was to describe the scope of concomitant use of dietary supplements and orthodox medicines among primary care patients due to non-communication with physicians in a tertiary hospital in Uyo, Nigeria. This was a prospective descriptive cross-sectional study involving 573 respondents conducted between September 2014 and February 2015. Using a systematic sampling technique, respondents aged between 18 and 69 years were recruited, data were collected using a structured interviewer-administered questionnaire. Of the 573 respondents recruited into the study, 62.2%(n=356) used dietary supplements made up of 43.0 %(n=246) females and 19.2 % (n=110) males. Frequency of dietary supplements use was seen to increase with age 16.1%(n=92), among the more educated 43.3% (n=248), and among high level income earners, 26.4%(n=151). Herbs or other botanicals were the most preferred supplements, 37.1%(n=132).The patterns of concomitant dietary supplements and orthodox medicine use were as follows: one kind of supplement and one medicine, 21.3%(n=76),two kinds of supplements and four medicines, 6.7%(n=24), three kinds of supplements and more than four kinds of medicine,5.3%(n=19),more than four kinds of supplements and more than four kinds of medicines, 5.6%(n=20).The commonest reason given for not disclosing dietary supplements use to physicians was that physicians never asked (p=0.001). In conclusion, concomitant use of dietary supplements and orthodox medicine is common among primary care patients in Uyo. Primary care physicians need to be more pains-taking in their interactions with patients to forestall any adverse event that may arise following the prescription of orthodox medicines to patients that are already taking dietary supplements.

Keywords: Dietary supplements, Herbs, Orthodox medicines, Questionnaire, Systematic sampling technique

INTRODUCTION

The use of dietary supplements has recently increased worldwide (Gardiner et al., 2006). In the past, dietary supplements were used as a nutritional supplement, because malnutrition was a major health issue. But now,

dietary supplements are used not only as nutritional supplements, but also in the prevention and treatment of diseases (Fugh – Berman, 2000; Ikuyama et al., 2009). Dietary supplements are regulated by the Dietary Supplement Health and Education Act of 1994 (DSHEA).

According to the act, dietary supplements are products (other than tobacco) taken by mouth that is intended to supplement the diet and include the following: Vitamins: which include vitamins A, D, E, C, B6, B12, Thiamine, riboflavin, niacin, folate, biotin, pantothenic acid; Minerals: such as calcium, iron, zinc, magnesium, manganese, selenium, copper, chromium, iodine; Herbs or other botanicals: which comprise garlic, gingko, Chamomile, dandelion, milk thirstle, capsicum, valerians, yohimbe, guarana; Amino acids: consisting of lysine, tryptophan, cysteine, isoleucine, methionine, valine; A dietary supplement used to supplement the diet by increasing the total dietary intake: consisting of fish oil, blue-green algae, bee pollen, bone meal and melatonin; concentrates, metabolites constituents or combinations: which include Allicin (from garlic), gingko, ginsenosides, bilberry extract and chamomile tea (Dietary supplement Health and Education Act, 1994).

In Nigeria, however, drugs and related products are regulated by the National Agency for Food and Drug Administration and Control (NAFDAC) (2004). The definition and classification of dietary supplements according to NAFDAC are, however, not clear cut. A general theme underlying a majority of alternative therapies is their emphasis on natural modes of healing (Franklin et al., 2009). Dietary supplements are thought to be easily accessible and relatively inexpensive natural substances that are purported to promote health, prevent or treat a number of disease conditions (Devla et al., 2011; Ohama et al., 2006). For many patients, the use of supplements represents an effort to take charge of and be instrumental in their health care (Bailey et al., 2013). Such patients tend to exert more autonomy with regards to their health care. Problems however, exist concerning the consumption of dietary supplements, and these include inappropriate use, their excessive intake, non-disclosure of dietary supplements use by patients resulting in concomitant use of various dietary supplements with orthodox medicines due to non-communication between patients and physicians (Chiba et al., 2014).

Many reasons have contributed to the inappropriate use of dietary supplements. These include the absence of a clear, official definition of dietary supplements in Nigeria as well as many dietary supplements claim to treat diverse disease conditions, even though such claims might be clearly misleading. Moreover, since dietary supplements are available as liquids, capsules or tablets, they have the appearance of medicines and, thus, are often considered to be as effective as medicines. Direct-to-consumer advertising has significantly impacted supplements sales as manufacturers of dietary supplements have aggressively marketed their products to the public in mass transit buses, print media, on the radio, on television and over the internet.

Previous studies have reported that dietary supplements are now being used to prevent and treat various diseases (Fugh – Berman, 2000; Ikuyama et al., 2009; Hyodo et al., 2005). In Nigeria, there are also reports on the use of supplements as complementary and alternative medicine by various patient groups.

About 65% of cancer patients are reported to have used herbs, aloe-Vera and medicinal tea along with orthodox medicines in Enugu, South-East Nigeria (Ezeome and Anarado, 2007). Among hypertensive patients seen in an urban tertiary health care centre in Lagos, South-West Nigeria, 39% reportedly used herbs along with their orthodox medicines (Amira and Okubadejo, 2007). About 46% of patients treated for diabetes mellitus in Lagos South-West Nigeria used complementary and alternative medicine (CAM) along with their orthodox medications (Ogbera et al., 2010). Dietary supplements are generally regarded by patients as safe. However, a number of adverse events have been reported over the past few years with the use of these substances (Palmer et al., 2003). Concern over drug-herbs interactions have also arisen (Fugh Berman, 2000). Because of poor communication, patients often do not disclose their dietary supplements use to their health care providers, thus making identification of potential adverse events difficult (Robinson and McGrail, 2004).

Published data on the scope of concomitant use of dietary supplements and orthodox medicines among primary care patients due to non-communication with physician in Uyo are scarce in the scientific literature. Findings from this study would sensitize physicians on the need to openly discuss dietary supplements use with their patients who might be on treatment with orthodox medicines. This will hopefully assist in an effort to prevent untoward effects arising from concomitant use of dietary supplements and orthodox medicines with the goal of strengthening the provider patient-relationship.

MATERIALS AND METHODS

This study was carried out in the family medicine outpatient clinic of the University of Uyo Teaching Hospital (UUTH). UUTH is located in the outskirts of Uyo, the Capital of Akwa Ibom State of Nigeria. Nigeria is divided into six geo-political zones as follows: North-East, North-West, North-Central, South-West, South-East and South-South. Uyo, the capital of Akwa Ibom State is located in the South-South geo-political zone of Nigeria. UUTH is currently the only tertiary and referral health institution in the State and presently serves a population of 3.9 million people (WHO, 2007).

Subjects

A total of 573 consenting adult male and female subjects between 18 and 69 years of age who attended the family medicine outpatient clinic took part in the study.

Sample size for this study was calculated using the formula $n = Z^2 pq/d^2$ (Rao, 2007), where 'n' is the desired sample size, 'z' represents standard normal deviation set at 95% confidence level which corresponds to 1.96, 'p' is the reported prevalence of dietary supplement use (Aina and Ojedokun, 2014), 'd' is the precision which at 95% confidence interval is 5%. The calculated sample size was 384. Two thousand seven Hundred (2700) respondents were sampled during the study period. They were recruited using a systematic sampling method with a sampling interval of seven. Numbers ranging from one to seven were assigned to the first seven subjects who met the inclusion criteria which included consent to take part in the study, age not below 18 years or above 69 years. The exclusion criteria included patients who were too sick to be recruited or those with clinical conditions that needed urgent medical attention.

The first respondent was chosen by simple balloting, at which one of the numbers from a basket containing the assigned numbers was selected. Subsequently, every 7^{th} subject was recruited into the study. Where, however, such a respondent was below 18 years or above 69 years of age, the respondent was dropped. Then the next respondent who met the inclusion criteria was recruited.

Ethical approval for this study was obtained from the UUTH Health Research and Ethical Committee. A pretest of the research proforma was performed to determine its applicability, experience and logistic problem.

Methods

This was a prospective descriptive cross-sectional study conducted between September 2004 and February 2015.Five hundred and seventy three respondents aged between 18 and 69 years were recruited after obtaining informed consent from them.

A structured and pretested interviewer-administered questionnaire was used to obtain information about socio-demographic profiles of the respondents. Respondents' level of income was determined using the Nigerian National Minimum Wage act passed by the Nigerian parliament (National Minimum Wage Act, 2011). The act stipulates a maximum basic monthly salary of sixty thousand naira for low income earners between salary grade levels 01 and 07, middle level income earners range from salary grade levels 08 to 15 with a maximum basic monthly income of sixty five thousand naira only, while high level income earners range from salary grade levels 16 to 17 with a maximum basic monthly income of two hundred and ninety-five thousand naira only. At present, two hundred and twenty five naira exchanges for one American dollar.

The questionnaire also elicited information about types of dietary supplement as defined by the DHEAS Act, (1994) as well as the number of dietary supplements and medicines used concomitantly by the respondents and the reasons for non-disclosure of supplements use to their physicians.

Data Analysis

Statistical analysis was done using the statistical package for social sciences (SPSS) version 18.0. Distribution and cross tabulation was generated, chi-square was used to compare proportions. The p-value of 0.05 was used to determine the level of statistical significance.

RESULTS

Five hundred and seventy three (573) respondents participated in the study. This was made up of 36.8% (n=211) males and 63.2% (n=362) females. The average age of respondents in this study was 41.6$\pm$ 3.6 years. Table 1 shows the socio-demographic characteristics of the respondents

A total of 43.0% (n = 246) female respondents used dietary supplements compared to 19.2% (n=110) males who also used dietary supplements. The overall prevalence of dietary supplements use among participants in this study was 62.2%. Respondents with post-secondary school education were the major consumers of dietary supplements in this study accounting for 24.1% (n = 138).

Respondents who were married as well as those who belonged to the high level income group constituted the highest number of dietary supplement users accounting for 31.5% (n = 112) and 26.4% (n = 151) respectively. Table 2 shows the frequency and types of dietary supplements used by respondents in this study.

A total of 20.2% (n = 72) respondents used vitamins, 37.1% (n = 132) used herbs while 25.0% (n = 89) respondents used concentrates. Table 3 shows the number of respondents who took dietary supplements and orthodox medicines concomitantly.

The most common pattern was one kind of dietary supplement and one kind of medicine 21.3% (n = 76); more than 6.7% (n=24) respondents used four kinds of medicines and two kinds of dietary supplement; 5.3% (n=19) respondents used four kinds of medicines and three kinds of dietary supplements; 5.6% respondents (n=20) took more than four dietary supplements and more than four medicines concomitantly.

Table 1. Socio-demographic characteristics of respondents using or not using dietary supplements

Variable	Dietary Supplements				P- Value
	USERS (n = 356[%])		NON – USERS (n = 217[%])		
Sex					
Male	110	[19.2]	101	[17.6]	0.001*
Female	246	[43.0]	116	[20.2]	
Age in Years					
18 – 24	23	[4.0]	25	[4.4]	
25 – 34	46	[8.0]	38	[6.6]	
35 – 44	51	[8.9]	52	[9.1]	0.001*
45 – 54	66	[11.5]	33	[5.8]	
55 – 64	78	[13.6]	37	[7.0]	
65 – 69	92	[16.1]	32	[5.6]	
Educational Level					
No Formal Education	72	[12.6]	52	[9.1]	
Primary School	36	[6.3]	49	[8.6]	
Secondary School	110	[19.2]	62	[10.8]	0.001*
Post Sec. School	138	[24.1]	54	[9.4]	
Marital Status					
Single	111	[19.4]	37	[6.5]	
Married	112	[19.5]	75	[13.1]	
Co-Habiting	84	[14.7]	59	[10.3]	0.001*
Divorced/Separated	49	[8.6]	46	[8.0]	
Income					
Low Level	81	[14.1]	104	[18.2]	
Middle Level	124	[21.6]	66	[11.5]	0.001*
High Level	151	[26.4]	47	[8.2]	

*Statistically significant

Table 2. Frequency and types of dietary supplements used by respondents

Variable	Frequency	Percentage [%]
Vitamins	72	20.2
Minerals	34	9.6
Amino Acids	9	2.5
Herbs Or Other Botanicals	132	37.1
Supplements	20	5.6
Concentrates	89	25.0
Total	**356**	**100**

Table 3. Number of dietary supplements and medicines used concomitantly by respondents

Variable	Number of Medicines			
Number of dietary supplements	1	2	3	≥4
1	76	34	14	17
2	19	16	19	24
3	12	16	18	19
≥4	16	17	19	20

Table 4 shows the reasons given by Respondents in this study for not disclosing their dietary supplements use to their physicians.

A total of 14.7% (n = 84) respondents claimed that their physicians did not ask them about dietary supplements use (p = 0.001); 19.5% (n = 112) respondents, however, did not believe that concomitant use of dietary supplements can have any influences on orthodox medications (p = 0.007).

Although not statistical significant, 10.5% (n = 60)

Table 4. Reasons for not disclosing dietary supplements use to physicians

Variable	Dietary Supplements				P- Value
Reasons For Not Disclosing Dietary Supplements Use To Physicians	**Users (n = 356[%])**		**Non – Users (n = 217[%])**		
Physicians Never Asked About Dietary Supplements	84	[14.7]	32	[5.6]	0.001*
Dietary Supplements Do Not Have Influences On Medications	112	[19.5]	61	[10.6]	0.007
Physicians May Criticize Dietary Use	44	[7.7]	29	[5.1]	0.301
Dietary Supplements Are Just Foods	60	[10.5]	35	[6.1]	0.099
Dietary Supplements Are Only Used When Needed	56	[9.8]	60	[10.5]	0.899

*Statistically significant

respondents felt that dietary supplements were just foods (p = 0.099); while 9.8% (n = 56) respondents believed that dietary supplements were used only when needed (p = 0.899).

DISCUSSION

The overall prevalence of dietary supplements use in this study was 62.2%.This was higher than the prevalence rate of 50.0% reported among college students in Lagos south-west Nigeria. The popularity of dietary supplements among respondents in this study might be due to the fact that most of them do not fully appreciate that dietary supplements are not the same as orthodox medicines, as such they tend to use dietary supplements in an attempt to treat specific diseases instead of medicines. The prevalence of dietary supplements use among male respondents in this study was 19.2% compared to 43.3% among females. This is, however, lower than the prevalence rates of 49.0% and 66.0% reported among African-American men and women respectively (Talegawkar et al., 2007). The differences can be explained on the basis of the differences in methods used in the studies as well as the population studied.

The frequency of use of dietary supplements was seen to increase with increasing age of respondents as well as acquisition of post-secondary level of education in this study.

Several epidemiological studies have correlated dietary supplements use with people who belong to high socio-economic status, affluent and highly educated (Masserer et al., 2001; Rock, 2007; Hirayama et al., 2008). The increasing frequency of supplements use among the aged in this study might suggest that other factors could contribute to this.

Such factors might include the fact that the elderly constitute one of the high-risk groups for developing chronic diseases, as such, dietary supplements may be seen as a quick hassle-free cure for most health problems common in individuals within this age group.

The most frequently used dietary supplement among respondents in this study was herbs or other botanicals. Other studies have also reported herbs as the most preferred type of supplements (World Health Organization, 2008; Igoli et al., 2005; Jones et al., 2006). The popularity of herbs might be due to their perceived naturalness with the assumption that they are safer, and milder than human-derived medications. Vitamins and concentrates were the next most commonly consumed supplements by respondents in this study.

This finding is similar to published reports from other studies (Aina and Ojedokun, 2014; Park et al., 2008; Adler and Fosket, 1999). The reason for this is not unconnected with the fact that access to vitamins are unrestricted since physician consultation or prescriptions are not required before purchase.

The major reason given by respondents for not disclosing their concomitant use of dietary supplements and medicines is that physicians never asked them about it. This point of view emphasizes the need for open and frank communication between patients and physicians on the use of alternative treatment besides orthodox remedies for their health care needs (Corbin and Shapiro, 2002; Silverstein and Spiegel, 2001). Physicians need to be conversant with dietary supplements used by their patients in order to dispel wrong beliefs held by them for combining dietary supplements and medicines. This will

avoid any possible interactions between dietary supplements and medicines.

If sufficient evidence exists to warrant any doubt about the safety of any supplement, physicians need to counsel their patients to cease the concomitant use of medicines and dietary supplements. There were some limitations to this study: This study used hospital outpatient clinic attendees only, as such, the findings may not be generalized to the general population.

CONCLUSION

In conclusion, findings from this study show that concomitant use of dietary supplements and orthodox medicines is common among respondents seen in the Family medicine clinic of University of Uyo Teaching Hospital. This stresses the need for primary care physicians to be more pains-taking in interviewing patients regarding their concomitant use of dietary supplements and orthodox medicine before commencing treatment. Such approaches will forestall drug-supplement interactions among patients with varying beliefs on mode of treatment for diverse medical problems so as to create room for caution regarding use of supplements and medicines.

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