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Prevalence of Self-Treatment with Complementary Products and Therapies for Weight Loss: A Randomized, Cross-Sectional Study in Overweight and Obese Patients in Colombia

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ABSTRACT

Background: The use of complementary and alternative medicine for weight loss is becoming increasingly common worldwide. In overweight or obese patients, this practice could be harmful. Available data concerning the use of complementary therapies and products (CTPs) for weight loss in these patients in Colombia are limited.

Objectives: The aims of this study were to determine the prevalence of self-treatment with CTPs in overweight or obese patients in Colombia and to explore the relationship between CTP use and demographic, anthropometric, and biochemical parameters.

Methods: This randomized, cross-sectional study was conducted at a registered dieticians' office located at the Center for Nutritional Care, School of Nutrition and Dietetics, University of Antioquia, Medellín, Colombia, and at an outpatient clinic attended by a registered dietician located at the Pablo Tobón Uribe Hospital, Medellín, Colombia. The study enrolled a random sample of overweight (body mass index [BMI], 25–30 kg/m^2) or obese (BMI, >30 kg/m^2) male and female patients aged 20 to 50 years received nutritional treatment in Colombia in 2002. Data concerning the use of weight-loss CTPs were gathered, and their possible association with demographic, anthropometric, and biochemical data was explored.

Results: This randomized study comprised 94 patients (70 women, 24 men; mean [SD] age, 36.5 [9.7] years; mean [SD] BMI, 28.4 [4.2] kg/m^2). Forty-nine (52.1%) patients reported self-treatment with weight-loss CTPs; 40 (42.6%) patients used complementary products, and 21 (22.3%) used complementary therapies. Among the products, inadequately identified herbal medicines (ie, absence of available information concerning the composition of the products or

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information could not be obtained from the patient [many of the products used were not authorized for distribution in Colombia]), folkloric or home remedies, and commercial diets were most commonly used (40.0%, 40.0%, and 27.5%, respectively). The use of CTPs was more prevalent in women compared with men ($P < 0.001$; odds ratio [OR] = 6.43). In women, CTP use was significantly higher in patients with a higher educational level ($P = 0.008$; OR = 3.82) and in those who were single ($P = 0.038$; OR = 2.97). The use of CTPs was also more frequent in patients with a negative view of their current nutritional therapy ($P = 0.002$; OR = 6.8).

Conclusions: In the small group of overweight and obese patients in this study, 52.1% used CTPs. In obese women, those with a higher educational level and/or who were single were more likely to use CTPs. Patients were also more likely to use CTPs if they had a negative view of their current nutritional therapy. (*Curr Ther Res Clin Exp.* 2006;67:66–78)

Key words: weight loss, herbal treatments, obesity, complementary medicine.

INTRODUCTION

The usage of complementary and alternative medicine (CAM) in combination with or instead of standard medical care is high and continues to increase. One US study reported that the percentage of the population using CAM increased from 33.8% to 42.1% between 1990 and 1997.[1] Other US studies have reported CAM use ranging from 28.9% to 62.1%.[2–4] In 1 study of ambulatory patients referred to an internist, the estimated proportion of patients who had used CAM was 85.4%.[5] In those studies, some of the reasons for using CAM reported by patients included maintaining good health[5] and preventing or treating musculoskeletal conditions, allergies, and other respiratory problems.[1,4] Patients with cancer,[6] chronic disease (eg, diabetes mellitus),[7] and other severe diseases[5,8] have reported CAM use. Some patients use CAM in addition to conventional therapy.[1,2,4] Reasons patients have cited for supplemental CAM use include discontent with medical outcomes[4,8] and the perception that CAM is harmless.[4,9,10]

CAM use is highest in patients who are female, are nonsmokers, are physically active, have a normal body mass index (BMI), and/or eat low-fat diets with a high fruit and vegetable content.[11] Individuals aged 35 to 54 years with a high level of education and above-average incomes have been found to use CAM more frequently compared with the general population.[1–4,6,12] Women most commonly cite maintenance of a healthy body and mind[2,4] and weight reduction[12,13] as reasons for CAM use.

Obesity, a common chronic condition that continues to increase in prevalence (~1.1 billion adults worldwide are classified as overweight or obese),[14] is associated with a decreased life span,[15] and contributes to morbidity and mortality from a variety of secondary chronic conditions.[16,17]

The combination of caloric restriction, increased physical activity, and behavioral therapy might be an effective approach to obesity.[18] However, some patients might require pharmacotherapy or other strategies to reach their therapeutic goals.[18,19] In a meta-analysis[20] of 79 clinical trials of diet plus pharmacotherapy (sibutramine, orlistat, fluoxetine, sertraline, bupropion, topiramate, or zonisamide) for obesity, the mean weight loss was found to be 10 kg at 1 year. However, such outcomes frequently do not meet patients' expectations, especially in those with the highest pretreatment weights.[21] This difference between expectations and outcomes might lead to patients having negative perceptions of their weight-loss therapy and a lack of motivation to adhere to the therapy.[12] As a result, patients might use CAM (in combination with conventional medical care), involving the use of diet and/or medicines plus complementary therapies and products (CTPs) for weight loss.[22–31] Most often, CTPs are used without the knowledge of a health care professional.[11,22] There is little evidence of the efficacy of CTPs,[23,24,28] and their association with adverse events is a concern.[10,22,28]

Information concerning the prevalence and anthropometric and biochemical parameters associated with the use of CTPs for weight loss in overweight or obese patients is limited. The objectives of this study in overweight or obese patients receiving nutritional treatment were to determine the prevalence of self-treatment with CTPs and to explore the relationship between CTP use and demographic, anthropometric, and biochemical parameters.

PATIENTS AND METHODS

This randomized, cross-sectional study was conducted at a registered dietician's office located at the Center for Nutritional Care, School of Nutrition and Dietetics, University of Antioquia, Medellín, Colombia, and at an outpatient clinic attended by a registered dietician located at the Pablo Tobón Uribe Hospital, Medellín, Colombia. The study protocol was approved by the respective institutional review board.

Inclusion and Exclusion Criteria

Overweight (BMI, 25–30 kg/m^2) or obese (BMI, >30 kg/m^2) male and female patients aged 20 to 50 years who were receiving ambulatory nutritional treatment during 2002 were eligible for the study. Nutritional treatment comprised a low-calorie diet (500 kcal/d less than the total energy intake required to maintain body weight). The diet provided 30% of energy from fat, 55% from carbohydrates, and 15% from protein. Exercise (≥30 minutes 4 times a week) was also recommended to patients. Patients with cardiovascular disease, those receiving nutritional treatment other than a calorie-restricted diet, and pregnant or breastfeeding women were excluded. Patients who prayed for health reasons were also excluded from the study.

The files of patients who met the inclusion criteria based on their medical records were numbered from 1 to 312 consecutively. Using Epi-Info version

6.04b (Centers for Disease Control and Prevention, Atlanta, Georgia), a list of random numbers was obtained. Patients whose file number coincided with the random numbers were invited to participate. Written informed voluntary consent was obtained from all of the patients who were enrolled in the study.

Methods

The primary end point was the prevalence of self-treatment with CTPs in overweight or obese patients receiving nutritional treatment, and the secondary end points were the relationships between CTP use and demographic, anthropometric, and biochemical parameters.

During a clinic visit, the prevalence of self-treatment with CTPs in combination with conventional nutritional treatment, along with demographic, anthropometric, and biochemical parameters were gathered by 2 dieticians, 1 bacteriologist, or 2 students of nutritional therapy trained in collecting such information. Also at the clinic visit, patients verified that they had not ingested food, beverages, or diuretics for a minimum of 12 hours before the visit and that they had not engaged in intense physical activity or ingested fatty foods in the 24 hours before the visit.

To determine the use of self-treatment with CTPs in combination with conventional nutritional treatment, patients were asked several questions. First, they were asked whether they had ever self-administered complementary therapies for weight loss during the past year. The patients who answered *yes* were then asked to specify which of the following therapies they had used: massage, bioenergy, acupuncture, electrostimulation, chiropractic, or other. They were also asked whether they had ever self-administered complementary products for weight loss during the past year. Patients who answered *yes* were asked to specify the type of product used—commercial diet (diets different from those of the nutritional treatment), folkloric or home remedies (infusions or boiled preparations of medicinal plants or food products), herbal medicines (medicinal plants prepared in a dosing formulation and adequately or inadequately identified), or homeopathic medicine (any composition and infinitesimal dose).[1–7,11]

To determine patients' satisfaction with their weight loss and nutritional treatment, patients were asked: "How would you qualify the weight loss reached during the nutritional treatment?" and "How would you qualify your satisfaction with the received nutritional treatment?" Answers were rated on a 6-point scale (0 = extremely unsatisfactory to 5 = very satisfactory).

Anthropometric Data

The anthropometric data were measured with excess clothing and materials removed. Weight was measured using a standard electronic scale (Platform Scale, A&D Co. Ltd., Phoenix, Arizona) with a capacity of 150 kg and accuracy ±0.05 kg. Height was measured using a standard ruler that could be used to measure up to 220 cm with an accuracy ±0.1 cm. Waist circumference (WC) and hip circumference were measured using a fiberglass tape measure (Mabis,

Tokyo, Japan) with an accuracy ±0.1 cm. The mean of 2 measurements of weight and height were used. Using Quantum II (RJL Systems, Clinton Township, Michigan) the percentage of fat weight (%FW) was determined using the bioelectrical impedance technique with 4 electrodes.

BMI was classified as follows: low weight, <18.5 kg/m^2; normal weight, 18.5–24.9 kg/m^2; overweight, 25.0–29.9 kg/m^2; and obese, >30.0 kg/m^2. Waist/hip ratio (WHR) >0.9 in men and >0.85 in women was considered higher risk. WC >102 cm in men and >89 cm in women was considered higher risk. In men, %FW was classified as follows: thin, <12%; appropriate, 12% to 15%; acceptable, >15% to 20%; and excessive, >20%. In women, %FW was classified as follows: thin, <15%; appropriate, 15% to 20%; acceptable, >20% to 25%; and excessive, >25%.[18]

Patients enrolled in the study received individual care by a registered dietician concerning diet for healthy adults, as recommended by National Task Force on the Prevention and Treatment of Obesity[14]; and the dietician encouraged each patient to consume a nutritionally balanced, low-calorie diet (500 kcal/d less than the total energy intake required to maintain body weight) and some meal plans and daily menu options were provided.

Biochemistry

Personnel from the Bacteriology Laboratory, University of Antioquia, Medellín, Colombia, collected blood samples and performed the analyses. Because the patients did not have established cardiovascular disease (primary prevention), levels of fasting plasma glucose, 70 to 109 mg/dL; total cholesterol (TC), ≤239 mg/dL; low-density lipoprotein cholesterol, ≤129 mg/dL; high-density lipoprotein cholesterol, ≥40 mg/dL; and triglycerides, ≤149 mg/dL were considered normal.[32]

Statistical Analysis

Statistical analysis was performed using SPSS version 10 (SPSS Inc., Chicago, Illinois). Data are reported as mean (SD). The χ^2 test was used to compare proportions, and the Student t test was used to compare means, including odds ratios (ORs) and 95% CIs. Comparisons were analyzed using a 2-tailed test. $P < 0.05$ was considered statistically significant. The Fisher exact test was used to compare categories that had <5 data sets.

RESULTS

One hundred five patients were selected; 94 agreed to participate and completed the study (70 women, 24 men; mean [SD] age, 36.5 [9.7] years; mean [SD] BMI, 28.4 [4.2] kg/m^2; mean [SD] time after beginning of nutritional treatment, 13.1 [3.0] months). Eleven patients did not attend the session in which data were collected, for a variety of reasons, most of which were related to time restrictions. Demographic and baseline clinical characteristics of and CTPs use by the patients are shown in **Table I.**

Table I. Demographic and clinical characteristics of the study patients.[1]

Characteristic	Used CTPs (n = 49)	Did Not Use CTPs (n = 45)	All Patients (N = 94)
Age group, no. (%)			
≤38 y	27 (55.1)	21 (46.7)	48 (51.1)
>38 y	22 (44.9)	24 (53.3)	46 (48.9)
Sex, no. (%)			
Female	44 (89.8)[2]	26 (57.8)	70 (74.5)
Male	5 (10.2)	19 (42.2)	24 (25.5)
Socioeconomic status, no. (%)			
Low–medium	36 (73.5)	36 (80.0)	72 (76.6)
Medium–high	13 (26.5)	9 (20.0)	22 (23.4)
Educational level, no. (%)			
≤Primary school	11 (22.4)	18 (40.0)	29 (30.9)
≥Secondary school	38 (77.6)	27 (60.0)	65 (69.1)
Marital status, no. (%)			
Single	25 (51.0)	17 (37.8)	42 (44.7)
Married	24 (49.0)	28 (62.2)	52 (55.3)
Physical activity, no. (%)			
Never or rarely	20 (40.8)	22 (48.9)	42 (44.7)
Regularly	29 (59.2)	23 (51.1)	52 (55.3)
Associated pathology, no. (%)			
Yes[3]	19 (38.8)	19 (42.2)	38 (40.4)
No	30 (61.2)	26 (57.8)	56 (59.6)
Satisfied with weight loss, no. (%)			
Yes	18 (36.7)	30 (66.7)	48 (51.1)
No	31 (63.3)[4]	15 (33.3)	46 (48.9)
Satisfied with nutritional treatment, no. (%)			
Yes	33 (67.3)	42 (93.3)	75 (79.8)
No	16 (32.7)[5]	3 (6.7)	19 (20.2)
Consumed fruits and vegetables, no. (%)			
Yes	34 (69.4)	30 (66.7)	64 (68.1)
No	15 (30.6)	15 (33.3)	30 (31.9)
Anthropometric variables, mean (SD)			
Weight, kg	70.8 (13.6)	74.7 (9.9)	72.2 (17.2)
BMI, kg/m^2	28.2 (4.6)	28.7 (3.9)	28.4 (4.2)
%FW	38.3 (7.3)[6]	34.3 (11.4)	36.3 (9.6)
WC, cm	83.7 (11.1)[7]	88.8 (8.5)	86.1 (10.2)
HC, cm	102.5 (8.4)	102.6 (7.0)	102.5 (7.7)
WHR	0.81 (0.07)[8]	0.87 (0.08)	0.83 (0.08)

(continued)

Table I. (Continued)

Characteristic	Used CTPs (n = 49)	Did Not Use CTPs (n = 45)	All Patients (N = 94)
Biochemical variables, mean (SD), mg/dL			
FPG	82.2 (10.6)	85.2 (22.4)	83.6 (17.2)
TC	193.4 (43.0)[9]	215.6 (50.0)	204.0 (47.6)
HDL-C	44.5 (9.7)	45.0 (14.0)	44.7 (11.9)
LDL-C	120.8 (37.6)	133.6 (35.9)	127.5 (36.7)
TG	140.3 (80.6)	171.7 (157.8)	155.3 (123.5)

CTPs = complementary therapies or products; BMI = body mass index; %FW = percentage of fat weight; WC = waist circumference; HC = hip circumference; WHR = waist/hip ratio; FPG = fasting plasma glucose; TC = total cholesterol; HDL-C = high-density lipoprotein cholesterol; LDL-C = low-density lipoprotein cholesterol; TG = triglycerides.
[1]Percentages might not total 100% due to rounding.
[2]$P < 0.001$ versus men (odds ratio [OR] = 6.43; 95% CI, 1.97–24.23).
[3]Includes hypertension, dyslipidemia, depression, anxiety, and back and/or joint pain.
[4]$P = 0.004$ versus no CTP (OR = 3.44; 95% CI, 1.47–8.05).
[5]$P = 0.002$ versus no CTP (OR = 6.8; 95% CI, 1.8–25.3).
[6]$P = 0.044$ versus no CTP.
[7]$P = 0.014$ versus no CTP.
[8]$P = 0.002$ versus no CTP (OR = 0.245; 95% CI, 0.99–0.608).
[9]$P = 0.023$ versus no CTP.

Use of Complementary Therapies and Products

Forty-nine (52.1%) patients responded that they had used weight-loss CTPs by self-treatment in addition to nutritional treatment. Specifically, 40 (42.6%) patients used complementary products, and 21 (22.3%) used complementary therapies (**Table II**). Some patients reported using as many as 3 weight-loss CTPs.

Among the products, inadequately identified herbal medicines, folkloric or home remedies, and commercial diets were the most commonly used alternatives (16 [40.0%], 16 [40.0%], and 11 [27.5%], respectively) (**Table III**). The folkloric or home remedies (n = 16) identified were *Ocimum basilicum* (basil) (3 [18.8%] patients), *Apium graveolens* (celery) (2 [12.5%]), *Citrus aurantium* (bitter orange) leaves (2 [12.5%]), *Taraxacum officinale* (dandelion) (1 [6.3%]), *Citrus decumana* (grapefruit) (2 [12.5%]), *Allium cepa* (onion) (1 [6.3%]), *Allium sativum* (garlic) (1 [6.3%]), *Medicago sativa* (alfalfa) (1 [6.3%]), *Avena sativa* (oatmeal) (1 [6.3%]), *Triticum aestivum* (wheat germ) (1 [6.3%]), and *Chayota edulis* (chayote) (1 [6.3%]).

The complementary therapies most often used were massage (6 [28.6%] patients), bioenergy (5 [23.8%]), and acupuncture (4 [19.0%]); smaller percentages of the patients used electrostimulation and acupuncture (2 [9.5%]), chiropractic and acupuncture (2 [9.5%]), electrostimulation and bioenergy (1 [4.8%]), auricular plaster therapy (weight-loss girdles) (1 [4.8%]), and chiropractic (1 [4.8%]).

Table II. Complementary therapies and products (CTPs) used by patients in self-treatment for weight loss (N = 49).

CTP	No. (%)
Complementary product alone*	28 (59.2)
Complementary therapy† and product*	12 (24.5)
Complementary therapy alone†	9 (18.4)

*Folkloric or home remedy, herbal medicine, homeopathic product, or commercial diet.
†Massage, bioenergy, acupuncture, electrostimulation, chiropractic, or auricular plaster therapy (weight-loss girdles).

Demographic Variables and Complementary Therapy and Product Use

Demographic data are presented in **Table I**. A significantly higher proportion of women reported using CTPs compared with men (44 [89.8%] vs 5 [10.2%]; $P < 0.001$; OR = 6.43 [95% CI, 1.97–24.23]). In women, CTP use was significantly more frequent in those having a high educational level compared with a lower level (34 [73.9%] vs 12 [26.1%]; $P = 0.008$; OR = 3.82 [95% CI, 1.23–12.62]) and those who were single compared with those who were married (28 [63.6%] vs 16 [36.4%]; $P = 0.038$; OR = 2.97 [95% CI, 1.04–8.49]).

In the overall study population, no significant differences in age, marital status, socioeconomic status, physical activity, associated morbidity, or educational level were found between the patients who used CTPs and those who did not.

Table III. Complementary products used by patients in self-treatment for weight loss (N = 40).

Complementary Product	No. (%)
Herbal medicine*	10 (25.0)
Folkloric or home remedy	11 (27.5)
Commercial diet	7 (17.5)
Folkloric or home remedy and commercial diet	2 (5.0)
Herbal medicine* and commercial diet	2 (5.0)
Herbal medicine* and folkloric or home remedy	2 (5.0)
Marrubium vulgare (horehound)	2 (5.0)
Herbal medicine,* *Acacia saligna* (mimosa), and folkloric or home remedy	1 (2.5)
Herbal medicine,* *Theaceae sinensis* (green tea), and homeopathic product	1 (2.5)
Homeopathic product	1 (2.5)
Quercus coccifera (kermes oak)	1 (2.5)

*Inadequately identified (absence of available information concerning composition, or information could not be obtained from the patients).

A significantly higher proportion of patients who used CTPs indicated dissatisfaction with their weight loss or nutritional treatment compared with nonusers (weight loss: 31/49 [63.3%] vs 15/45 [33.3%] patients; $P = 0.004$; OR = 3.44 [95% CI, 1.47–8.05]; nutritional treatment: 16 [32.7%] vs 3 [6.7%] patients; $P = 0.002$; OR = 6.8 [95% CI, 1.8–25.3]).

Anthropometric Variables and Complementary Therapy and Product Use

The anthropometric data are presented in **Table I**. The mean (SD) %FW was significantly larger in those who used CTPs compared with those who did not (38.3% [7.3%] vs 34.3% [11.4%]; $P = 0.044$), whereas mean (SD) WC (83.7 [11.1] vs 88.8 [8.5] cm; $P = 0.014$) and WHR (0.81 [0.07] vs 0.87 [0.08]; $P = 0.002$; OR = 0.245 [95% CI, 0.099–0.608]) were significantly smaller in CTP users than nonusers.

Biochemical Variables and Complementary Therapy and Product Use

For biochemical variables measured, the only statistically significant difference between the CTP users and nonusers was in mean (SD) TC level (193.4 [43.0] mg/dL vs 215.6 [50.0] mg/dL; $P = 0.023$) (**Table I**). No association was found between any of the biochemical variables and CTP use or nonuse.

DISCUSSION

The findings of this study suggest that >50% of overweight and obese patients receiving nutritional treatment use CTPs by self-treatment.

In a previous study, Blanck et al[22] found that only 7% of 14,679 male and female outpatients were self-treating with CTPs. The low rate found in that study compared with that in the present study (52.1%) might have been due to the facts that (1) Blanck et al[22] did not investigate the use of therapies; and (2) the study by Blanck et al[22] was carried out in the general population (in obese women in that study, the prevalence was 28.4%).

The present study found an association between the use of weight-loss CTPs and a lack of satisfaction with nutritional treatment. This finding was similar to that from a recent study of CAM use the United States,[4] in which 27.7% of CAM users indicated that they believed that the conventional treatments they received were not effective.[4] Similarly, a telephone survey in 232 patients with rheumatoid arthritis found that 50% of patients used complementary therapies because they thought their conventional medication was ineffective.[8] This result differs from those from a previous study,[9] in which data did not support the hypothesis that CAM use in the United States is due to dissatisfaction with conventional treatment.

Factors that might be associated with the frequent use of CTPs in overweight and obese patients are the notable increase in CTP use (mainly herbal or nutritional supplements, folkloric remedies, massage, multivitamins, and self-care groups) in the general population,[1,4,8] the availability and accessibility of these

products,[22] the low rate of fulfillment of the objectives of the nutritional treatment, the discrepancy between the expectations of the patients and the results achieved, and the difficulty in maintaining lifestyle changes.[12,21,23,26]

In the present study, the use of weight-loss complementary products (42.6%) was similar to that of herbal and nutritional supplements (33%) found by Gunther et al[11] in a study of 61,587 participants aged 50 to 76 years who completed a self-administered questionnaire.

However, the use of herbal medicines that are not authorized in Colombia for the treatment of weight loss and/or that have fictitious product names have been important obstacles in determining the composition, effectiveness, and tolerability of these products.[28–33] The inability to study herbal medicines for these reasons, and the possibility of serious adverse events due to drug interactions,[34] might present important health risks regardless of the possible beneficial effects of these products on weight loss.[29–31] Such adverse events have occurred with chromium salts, ephedra and ephedrine,[35] caffeine and other zantic bases,[23,36] and usnic acid.[37] In addition, the possibility of adulteration of CTPs with other substances and the fact that the sale of some CTPs has been prohibited in Colombia for several years might also lead to health risks.[38,39] However, in this study, we did not ask about adverse drug events.

Among the folkloric or home remedies patients reported using in our study, only *C aurantium*,[30] *C decumana*, and *T officinale* have been assessed in relation to the indications and have been recommended for the treatment of obesity.[24] This situation is similar to that in herbal medicines, of which only *Marrubium vulgare* (horehound) and *Camellia sinensis* (green tea) have been evaluated in relation to the indications and have been recommended for the treatment of obesity.[24] This finding shows the need to educate patients about the possible benefits of CTPs in the treatment of obesity.

As in other studies in the general population in the United States,[1,4] in patients who were consulting an internist, we found that women used CTPs more frequently compared with men.[5] The rate of CTP use in obese women in our study was 59.6%, and, as in other studies of the use of weight-loss products[22] or herbal or nutritional preparations,[11] in women who used CTPs, those with a higher educational level used these products significantly more frequently compared with women with less education.[1–8,11] This finding is related to a concern in this group to be healthy,[3,4,11] with emphasis on appearance and body weight.[13] In women, there was no clear explanation for the finding of the association between CTP use and being single. This topic could be researched in future studies.

With the exception of the WHR, no statistically significant associations were found between anthropometric indicators and CTP use. Several reviews assessing the effects of CTPs in the treatment of obesity found significant improvements in WC and WHR in patients who used CTPs, but concluded that more and better evidence of the benefits of these products[22,23,28] or therapies[27] was needed.

In the present study, the fact that the %FW was higher in CTP users suggests that these products might affect the distribution of corporal fat, which might

mean associated health risks.[15,32] This fat should be examined in a prospective, longitudinal study designed to compare the efficacy and tolerability of nutritional treatment plus CTPs versus nutritional treatment alone.

The finding in our study that patients who used CTPs had significantly lower TC levels compared with patients who did not use CTPs might have been the result of better habits and healthier lifestyles in CAM users.[11,13]

Health care professionals should investigate and analyze the benefits and risks of CTP use and document their findings in detail. Studies designed to determine the benefits and risks associated with CTP use in overweight and obese patients are needed.

Study Limitations

Because this study had several limitations, the results must be interpreted with caution. First, because this was a cross-sectional study with a small number of patients, causal associations could not be established. Such relationships could help to document the effectiveness or lack of effectiveness of the use of weight-loss CTPs. Second, some patients did not adequately identify the type of product that they were using, which reflected potential recall bias and limited a detailed review of potential benefits and risks of CTP use. Third, multiple statistical analyses were conducted in a small number of patients in the study. In addition, the exclusion of an analysis of prayer for health might have resulted in an underestimation of the percentage of patients who used CAM. Finally, adverse events were not recorded.

CONCLUSIONS

In the small group of overweight and obese patients in this study, 52.1% used CTPs. In obese women, those with a higher educational level and/or who were single were more likely to use CTPs. Patients were also more likely to use CTPs if they had a negative view of their current nutritional therapy.

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