Herbal Medicine Use among Puerto Rican Cancer Patients

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ABSTRACT

The use of herbal medicine has broadly spread worldwide and its use has been highly reported in the oncology population. Based on this, it is imperative the study of these products as possible agents that interacts with pharmacologically active agents in allopathic medicine. Although it has been previously reported, the use and reason for seeking herbs as a complement and alternative medicine for cancer treatment is barely documented in Latino cancer patients. In view of this, the purpose of this study is to report factors correlated to the use of supplemental vitamins and herbal medicine among Latino cancer patients. As reported, 81% of patients were diagnosed by first time and 40% of them were diagnosed principally with prostate cancer, breast cancer or colorectal cancer. 61% of them reported the use herbal medicine as an alternative or complement to their cancer treatments. The main reason to use these products was to enhance their immune system and improve their health status. From the products reported, the patients used from 3 to 46 products especially soursop, ginger, carrots, and Omega 3 (μ=10). A logistic regression demonstrated that those who were once married, married, and those who consume alcohol were 2 – 5 times more likely in the use of these products. In conclusion, marital status and alcohol use influence whether or not cancer patients use herbal medicine as an alternative or complement to their cancer treatments.

Keywords: Cancer, CAM, herbal medicine, herbal products, Latino/Hispanic

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INTRODUCTION

According to the World Health Organization (1), it is estimated that 8.2 billion of people in the world died due to cancer in 2012, and 30% from those cases were preventable. These cases have been reported from people living in developed countries, and it is estimated that 22 millions of cases will be reported for 2020 in the world representing a 150% increase of cancer cases (1). Based on this, the communities get different Public Health strategies to control incidence and mortality rates related to cancer (2, 3).

For instance, communities commonly recur to the use of herbal products as complementary and alternative medicine (CAM) independent of their health status and conditions (2-5). Since 1970 a greater consumption has been evidenced, also showing gaps in the possible interactions with pharmacological active agents in allopathic medicine (4,6-9). Evidence suggests that some products could have antagonistic, potential, and synergistic effects representing a risk factor for the patient (p.) and to the success of the treatment (10).

Although herbal medicine has been vastly documented among several populations such as Asiatics, the use and impact has been highly sub estimated especially in Hispanics (11-13). In view of this the purpose of this study is to report factors correlated to the use herbal medicine (HerbM) and supplemental vitamins among Latino cancer p. According to this objective, this study identifies the relationship between socio-demographic information, health profile, and a self-disclosure about the use and the reason of seeking supplemental vitamins and HerbM among cancer patients.

MATERIALS AND METHODS

Human rights

The Institutional Human Subjects Review Committee of the University of Puerto Rico, Medical Sciences Campus, approved this study (Protocol Number: A8190614).

Design and sample

The design used for this study was quantitative and cross sectional to identify the use and reason for seeking supplemental vitamins and HerbM among cancer p. in the Oncological Hospital of Hima•San Pablo at Caguas, Puerto Rico. The sample was composed of a randomly selected group of 233 p. while receiving chemotherapy, radiotherapy or both. All p. signed their informed consent.

Inclusion and exclusion criteria

Eligibility to participate in this study was determined by the following means: a) must be over 21 years of age, b) who could read and write Spanish, c) being diagnosed with cancer by a licensed medical doctor in Puerto Rico, d) should be able to consent the participation in the study, and e) must be receiving chemotherapy, radiotherapy or both in the selected oncological institution. The breach of any of these 5 inclusion criteria disqualified the p. Any individual bedridden, unable to consent, and with any mental or physical impairment that limits a direct communication with the investigator, was excluded from the study. Relatives, friends, companions or other person were not allowed to complete the self-questionnaire of the p.

Data collection and instrument

Data was gathered by means of a questionnaire derived from the original version, designed by Mahase, V., Jagroop, A., Kisson, K., Maharaj, A., Mathura, P., McQuan, C., Mohammed, C., Ramadhin D, supervised by Dr. Yuri Clement from the University of West Indies at St. Augustine, Trinidad and Tobago. The adaptation was made from the research project title: Investigation of

herbal medicine use and perceived efficacy among adult prostate, breast and colorectal cancer outpatients, attending specialty care facilities in Trinidad (2012). The questionnaire was adapted to the Spanish language and to the culture of the study participants. The data gathered by means of the interview includes: a) socio-demographic characteristics, b) health profile of p., and c) premises related to the usage of HerbM.

Each questionnaire session was 25-30 minutes long. After being completed and before being entered into the database, the principal investigator revised the questionnaire. All data was entered and analyzed using STATA 13. Double entry of data and data cleansing was carried out to minimize and correct errors attributable to data entry. Statistical significance was defined as $p< .05$. For the univariate analysis a descriptive data of each of the key variables were included. The bivariate analysis was used for socio-demographic variables, health status and the use of HerbM (yes = 1)/no = 0). This analysis includes chi-square tests of association, one-way ANOVA, Student t test and Pearson correlation, according to the distribution and variables. Nonparametric tests were performed for data not normally distributed. Also a logistic regression was used to control variables over the use of HerbM.

RESULTS

Socio-demographic characteristics

A sample of 233 consented to participate, showing a response rate of 93% of all approached participants that complied with inclusion criteria. From the sample, 66.25% (n=155) of them were females, mean age was 61± 12.9 years ranging from 25 to 83 years old. Also the 57.51% (n=134)

reported to be married and in a consensual union. The demographic details of p. are given in Table 1.

As reported, most of the p. completed high school (28.33%, n=66) and 74.76% (n=154) of them generate an income of $20,000 or less (Table 1). Also, most of the p. were retired (37.77%, n=88) with public health insurance (36.91%, n=86) (Table 1).

81.12% (n=189) of p. were diagnosed with cancer for first time and 43.85% (n=57) of them on the year 2014. The most frequently diagnosed cancer types were breast (29.61%; n=69), prostate (15.88%; n=37), colorectal (10.30%; n=24) or other types of cancer (22.75%; n=53). 38.20% (n=89) of p. were receiving chemotherapy, 33.91% (n=79) radiotherapy, and 51.07% (n=119) reported being unaware of their cancer stage. The most common comorbidities reported were hypertension (50.2%, n=117), diabetes (27.9%, n=65) and high cholesterol levels (23.61%, n=55). Also, 44.21% (n=103) reported a good perception of their health status.

93.99% (n=219) of p. were not smoking at the moment of the study, 63.51% (n=141) of them were nonsmokers and 36.5% (n=81) smoked at any given moment in their lives. Only 17.60% (n=41) of p. were alcohol consumers (Table 1).

Supplemental vitamins and herbal medicine

61.37% (n=143) of p. reported to use these products for therapeutic purposes; 51.05% (n=73) reported the use of HerbM to their physician, and only 18.18% (n=26) of p. were asked by their physicians about the HerbM use. Most p. obtained their herbs or medicinal plants from backyards or herbal shop (45.31%, n=58), supermarkets (21.88%, n=28), pharmacies (18.75%, n=14.06) or from a CAM shop (14.06%, n=18).

As reported, the reason to use and consume HerbM, was to enhance their immune system (56.34%, n=80), to get control over their health condition (48.59%, n=69) and to make them feel

better after treatment (45.07%, n=64). Also, they reported that it makes them feel relaxed after treatment (42.25%, n=60), it enhance the treatment efficacy (42.25%, n=60), and helps lessening the side effects after chemotherapy or radiotherapy (42.25%, n=60). Most p. used more than three medicinal herbs (3 to 46) especially for therapeutic purposes, to prevent diseases or improve their health status (μ=10). Among herbal products reported, the soursop was the most commonly used product, especially the leaves and barks (54.00%, n=81), while 46.00% (n=69) preferred the fruit. Similarly, p. reported to consume ginger (42.67%, n=64), carrots (40.67%, n=61) and Omega 3 (40.67%, n=61) as HerbM. Table 2 summarizes all HerbM products used by p.

Socio-demographics, health status and herbal medicine

Table 3 summarizes all details related to the bivariate analysis for the use of HerbM. Age was related to suffering from a disease and HerbM use where those older were more likely to suffer a condition or disease (r_s = .19, p ≤ .05) and to consume less HerbM (r_s = -.16, p ≤ .05). Also, those who achieve a higher educational level were more likely to consume HerbM (r_s = .23, $p \leq .05$), and had a greater knowledge of places to obtain HerbM (r_s = .17, $p \leq .05$). P. with a higher consumption of these products had a wide knowledge of places to acquire these products (r_s = .23, $p \leq .05$). Other correlations are also shown in Table 3.

A logistic regression was performed to control variables in the use of HerbM (Table 4). The results demonstrated that HerbM consumption was significantly related with those p. once married/disrupted marriage (OR = 4.80, 95% CI = 1.75-13.17), married (OR = 3.93, 95% CI = 1.65-9.38), and with alcohol consumers (OR = .44, 95% CI = .18-1.03)

DISCUSSION

The objective of this study was to correlate the socio-demographic characteristics of cancer p. while receiving chemotherapy and radiotherapy with the use and reason for seeking HerbM. To our knowledge this is the first study with a wide sample of p. with different cancer types in Puerto Rico. According to our sample most p. were females. This is opposed to previous studies with cancer and it is strictly attributed to the population attended in the oncological institution. Also, the mean age was 60 years, which is the second age group with higher cancer rates, according to the cancer statistics reported in Puerto Rico (14). All other socio-demographical characteristics in our population compare with the national statistics in the island for cancer (14, 15). In terms of cancer diagnosis, our findings are similar to statistics reported for the United States and Puerto Rico for breast, prostate, and colorectal cancer (16).

Supplemental vitamins and herbal medicine

Our findings suggest that approximately half of p. reported the use of HerbM to their physicians. As previously reported the possible concerns about interaction with allopathic treatment are the main reason to discuss the HerbM consumption with a physician (17). Other authors have reported the lack of interest or knowledge by physicians as a barrier for p. to disclosure the use of HerbM (18). Also most of the p. demonstrates their predilection toward less processed or toxic products by acquiring these products from their backyards or herbal shops.

The principal reason for seeking these products was to enhance their immune system, to get control over their health condition and to make them feel better. This finding is highly correlated to previous studies which argues that minimal dissatisfaction toward medical care could leads to use these products during treatment (19). In view of these disparities, there is more

awareness toward creating health educational programs related to the use of these products and possible interactions with allopathic cancer treatment (19).

The most common products used as HerbM were soursop, ginger, carrots and Omega 3. According to the literature, the use of the soursop has been highly correlated with the proliferation and apoptotic process of cells, especially with the use of bark and leaves (20, 21). Previous findings have associated the pulp components with certain inhibitory activities such as carcinogenic tumors development in those p. with prostate and lung cancer (21). Also, vegetables such as ginger and carrots have been used worldwide, especially for some protectoral properties for cancer. The use of ginger has been related to relief secondary effects of cancer treatments such as stomach burning, diarrheas and nausea (22). Omega 3 has been used as a protectant for the inflammatory, tumorigenic and carcinogenic process, as well as their anti-oxidative and anti-apoptotic properties. It should be pointed out that Omega 3 has been beneficial to some chronic diseases by being anti-inflammatory and consequently by diminishing insulin resistance (23, 24).

Regarding correlations to HerbM use, other authors reported the use of these products mostly in younger individuals with higher educational levels. Authors proposed that older individuals may be more limited to the use of this products based on the perception of cancer recurrence (25). Similarly, individuals with higher educational level and HerbM use were more acquainted with places to obtain these products. As reported, previous studies suggest the influence of external factors such as relatives, friends, social media and television as sources of knowledge to purchase these products as well as their decision-making process toward treatment (26-28). Individuals who use more HerbM are more likely to know about multiple places according to their interest for better costs and quality of products (28).

After multivariate analysis our results increased odds of HerbM use among those married or disrupted marriage. This has been proven by recent studies which evidenced that p. who reported being married or unmarried had increased odds of adherence for cancer screening compared to those with other marital status (29). Also our results increased odds toward those who consume alcohol beverages, advocating for more interventions toward this population.

The most important limitations of this study were the use of a list of unknown products for most of p. Also, the questionnaire failed to quantified how often p. used the HerbM and their cost. More CAM modalities should be considered for the questionnaire. It also should be considered the memory bias and the cross sectional design which could limit cause and effect conclusion. Future research should be done to study the most common used products and their potential effects in cancer treatment. Also public health educational interventions should be considered about possible effects of these products during allopathic treatment.

Abbreviations:
CAM: complementary and alternative medicine
HerbM: herbal medicine
P.: patients

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