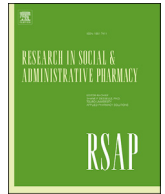


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A systematic review - Biologically-based complementary medicine use by people living with cancer – is a more clearly defined role for the pharmacist required?

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ABSTRACT

Background: Biologically-based complementary medicines (BB-CMs) including herbal, vitamin, mineral and nutritional supplements are frequently taken by people living with cancer. Pharmacists play an important and clearly defined role in the provision of standard cancer treatment. Due to the non-prescription status and easy access to BB-CMs, the role of the pharmacist in communicating to people living with cancer about their use is less clearly defined.

Aim: To explore the role of the pharmacist in communicating to people living with cancer about their use of BB-CMs.

Methods: Eligible studies were identified in PubMed, Medline, EmBase, International Pharmaceutical Abstracts and Google Scholar. Articles published between 2003 and 2016 were included searching for “Complementary OR Herbal medicine OR vitamin OR nutritional supplement”; and “cancer OR oncology patient”; and “pharmacist role OR attitude OR belief OR communication”.

Results: BB-CM use is prevalent among people living with cancer for the management of side effects and are taken under the belief they are safe, natural and holistic. Fifty per cent of cancer patients do not disclose their BB-CM use to their physicians due to a perception that it will be discouraged and/or their physician will not be knowledgeable about BB-CMs. There are known drug-herb/nutrient interactions but interestingly pharmacists are the least consulted health care professional (HCP).

Conclusion: With adequate knowledge about BB-CMs, pharmacists are well positioned as medication specialists to fill the current communication gap between people living with cancer and HCPs. Further research that informs the development of specific BB-CM guidelines for pharmacists in the management of cancer are required.

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1. Introduction

Complementary medicine (CM) use is popular among cancer patients. The World Health Organisation defines CM as “a broad set of health care practices that are not part of that country's own tradition or conventional medicine and are not fully integrated into the dominant health-care system. The term CM is used interchangeably with traditional medicine in some countries.”¹

CM health care practices are classified into five domains including (1) alternative medical systems; (2) mind-body interventions; (3) biologically-based systems, (4) manipulative and

body-based methods, and (5) energy therapies.² The use of herbal medicines, nutritional supplements and dietary interventions fall within the domain of biologically-based (BB-CMs).

The concomitant use of BB-CMs by people being treated for cancer with standard care has been investigated and reported as a common practice.³ The trend towards self-care behaviors and the subsequent integration of BB-CMs into the overall management of a person being treated for cancer raises important considerations including the potential for drug-nutrient and drug-herb interactions which may impact the therapeutic outcomes of treatment.⁴ It is estimated that 40–50% of people living with cancer do not consult health care professionals about their BB-CM use.^{5,6} Studies have explored the role of oncologists' interaction with their cancer patients regarding BB-CMs use.⁵ There has been less discussion about interactions between the pharmacist and people

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living with cancer about BB-CM use. The focus of this review is to identify literature that discusses the use of BB-CMs amongst people living with cancer and to find out to what extent pharmacists currently play a role in this area with a view to making recommendations for the future.

2. Methods

2.1. Data resources and search strategy

A systematic review of the literature was conducted by searching Medline, PubMed, EmBase, International Pharmaceutical Abstracts and Google scholar. Only studies in English were reviewed and all types of cancer were included.

The search included all available primary research publications, systematic reviews and meta-analyses. It was important to identify review articles that summarized key objectives of this review and capture relevant articles predating our search period. The search strategy and study selection was based on PRISMA guidelines.

The following key terms were included: (complementary OR herbal medicine OR vitamin OR nutritional supplement) AND (cancer OR oncology patient) AND (Pharmacist OR Pharmacist role OR attitude OR communication). The terms were searched as free text and MESH where appropriate. The search was limited to human studies published between January 2003 and 2016, this time period is associated with an increase in CM use by people living with cancer. Review articles also captured publications from 1994 to 2003 which is considered the beginning of a steady growth in BB-CMs in the general population.

BB-CM is a sub-category of complementary medicine that is used to define and differentiate specific complementary medicines i.e. nutritional supplements, vitamin, mineral supplements and herbal medicines within the broader category. However, the term is rarely used in scientific literature. Therefore, the search term BB-CMs was not used; instead, the term “complementary OR herbal medicine OR vitamin and mineral OR nutritional supplement” was chosen to ensure all BB-CMs studies were captured.

2.2. Study screening

Abstracts of the articles retrieved were reviewed for eligibility to be included in a full-text review. Inclusion criteria were that the articles reported findings and/or opinions related to the use of BB-CMs by people living with cancer and/or the role of health care professionals including pharmacists. Abstracts of articles which did not meet the selection criteria were excluded. Additionally, some studies were identified from eligible publications citation lists were also reviewed. A total of two guidelines were identified from two international professional organizations and one text book were used to substantiate findings. Following removal of ineligible publications and any duplications or triplications and addition of eligible publications identified from the citation lists, a total of 27 articles were included for a review.

3. Results

Following an in-depth review, three key areas relating to BB-CM use by people living with cancer were identified. The 27 articles were categorized into 3 themes: patient characteristics and reasons for use in cancer management ($n = 11$), potential anti-cancer drug-herb and anti-cancer drug-nutrient interactions ($n = 7$), and communication with people living with cancer and health care professionals about BB-CM use (20) see (Fig. 1).

3.1. Category 1: patient characteristics and reasons for BB-CMs use

The majority of the studies (20 articles) were conducted in the United States, Europe and Australia and the remaining studies were conducted in New Zealand, the Middle East and in Asia.

The prevalence rates of BB-CM use among cancer patients between studies varied from 5% to 60%, with the average prevalence amongst adults living with cancer being 31.4%.³ BB-CM use was more prevalent in females, younger patients and those with a higher level of education and higher socio-economic status. Among developed countries, 56% of people living with cancer in Singapore use BB-CMs with a slightly lower prevalence of use in the United States and Australia (25–50%).⁷ Table 1 illustrates the characteristics and prevalence of BB-CM use of people living with cancer. Table 2 illustrates the reasons people living with cancer use BB-CMs.

3.2. Category 2: potential of drug-herb interactions

Eight publications discussed the potential and/or theoretical interactions between standard cancer treatments and BB-CMs, summarized in Table 3.

3.3. Category 3: communication between cancer patients and HCPs related to BB-CMs use

3.3.1. Information sources for BB-CMs

The frequency with which people living with cancer consult community and hospital pharmacists for information about BB-CMs was relatively low (14% and 7% respectively). Instead, people with cancer were more likely to obtain information regarding BB-CMs from a range of other sources: family (31%), friends (29%), medical experts (20%), the Internet (16%), and media (12%).⁶ Of medical experts, general practitioners and oncologists were consulted about BB-CMs by approximately 40% of individuals living with cancer.⁶ The majority of BB-CM users trusted the information; however 73% of them would seek additional information through specialist consultations (60%), from product brochures (44%) and the internet (20%).^{7,15}

3.3.2. Disclosure by people living with cancer about BB-CM use

Davis et al. reported that 40–50% of patients had decided not to share their BB-CMs use with their physicians.⁵ The main reasons for non-disclosure included a patients' belief that their BB-CM use was irrelevant to conventional chemotherapy,³ physicians simply didn't ask about BB-CM use, a fear the physicians would disapprove or be disinterested, and physicians' inability to provide adequate information in addition to limited consultation time.⁵

There were no studies reporting disclosure of BB-CM use to pharmacists by people living with cancer. However, disclosure to physicians including oncologists has been reviewed. A survey by Lee et al. demonstrated that the majority of oncologists did not support BB-CMs due to the potential of drug-herb interactions, unnecessary costs to patients and disbelief regarding its efficacy in providing symptomatic relief. The study also revealed that approximately 70% of the oncologists reported having insufficient knowledge to advise on the efficacy and safety issues related to concomitant use of BB-CMs with standard care.¹⁶

Davis et al., reported a higher disclosure rate of BB-CM use in younger cancer patients with higher income and higher level of education.⁵ These patients were more likely to disclose their BB-CMs use when physicians had more effective communication skills and are willing to listen to them.^{5,17} In addition, cancer patients taking BB-CMs such as vitamins, herb and nutritional supplements were more likely to disclose their usage to physicians

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