

# The Use of Complementary and Alternative Medicines Among Surgical Patients: A Survey Study

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**Purpose:** *The use of complementary and alternative medicine (CAM) has increased around the world. This study evaluates CAM use in surgery patients.*

**Design:** *Cross-sectional and descriptive study.*

**Methods:** *This study was conducted in a university hospital in Turkey between January 1 and June 30, 2016, on volunteer inpatients who were scheduled for surgery because of various complaints.*

**Findings:** *In this study, 65.9% of the patients used CAMs, 87.4% of the patients used herbal methods, and 63.7% of the patients used cognitive-behavioral methods.*

**Conclusions:** *Health care providers, and nursing staff, in particular, should have adequate knowledge of societal approaches to CAMs, as well as the possible benefits and harms CAM may cause.*

**Keywords:** *complementary and alternative medicine, surgical patients, herbal methods, cognitive-behavioral methods.*

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**COMPLEMENTARY AND ALTERNATIVE MEDICINE (CAM)** can be described as a comprehensive medical field that involves health-related beliefs, accompanying theories, methods, and practices, which fall outside the practices of traditional medicine.<sup>1-3</sup> CAM use has increased in Turkey and around the world, with the global use of CAM reported in ratios that vary between 35.9% and 51.8%.<sup>4-8</sup> In Turkey, CAM use is reported to be the first-line treatment for 34% to 77% of the population.<sup>9-12</sup>

In 1991, in response to the widespread use of CAMs and lack of related literature, the National Center for Complementary and Alternative Medicine was founded under the United States National Institutes of Health. It has been reported that somewhere in the region of 1,800 individual CAM practices are in use around the world. The National Center for Complementary and

Alternative Medicine categorizes CAMs under five headings: mind-body medicine (biofeedback, meditation, hypnosis, Neuro-linguistic Programming, relaxation, yoga, and Tai-Chi), alternative medical systems (Indo-Ayurveda medicine, traditional Chinese medicine, and homeopathy), biological therapies (aromatherapy, plants, and vitamins), manipulative body-oriented systems (chiropractic, massage, and Alexander technique), and energy therapies (bioelectromagnetic therapies and bioarea therapies).<sup>13</sup> The CAMs that are most commonly used among cancer patients are the same as CAMs used for anxiety, depression, headache, backache, arthritis, and chronic diseases, including inflammatory bowel disease, hypertension, and chronic liver disease.<sup>2,3,12,14-17</sup> In a study of CAM use among cancer patients in Turkey, findings showed that the mean rate of use was 46.2%, with a range of 22.1% to 84.1%, with the most common use being herbal remedies (among which the most common is the stinging nettle [*urtica urens*]).<sup>9</sup>

The use of CAMs is also widespread among surgical patients, whose use of CAMs, according to previous studies, range between 23.0% and 65%.<sup>7,18-20</sup> Surgical patients commonly use complementary therapies in the postoperative period for the treatment of pain, nausea and vomiting, and wound healing. Nausea and vomiting in surgical patients in the postoperative period is one of the common problems that results from anesthesia and surgery, and has an adverse effect on patient comfort. The CAMs used to ease postoperative nausea and vomiting include music therapy, ginger chewing, hypnosis, dreaming, acupuncture, autogenous relaxation, biofeedback, acupressure, and aromatherapy.<sup>21-26</sup> The CAM techniques used to treat postoperative pain include relaxation, distraction, hypnosis, transcutaneous nerve stimulation, hot-cold application, and massage.<sup>21,26-29</sup> For wound healing, patients prefer herbs such as *apocrypha alangiana*,<sup>30,31</sup> *aloe vera*,<sup>32-35</sup> *Rosmarinus officinalis* (rosemary),<sup>36</sup> *Martynia annua*,<sup>37</sup> *Punica granatum* (pomegranate),<sup>38-40</sup> and *Momordica charatia* (bitter melon).<sup>41,42</sup> In a study of surgical inpatients in Turkey, 25% admitted using herbal remedies including sage tea (13.0%), linden (11.0%), and St John's Wort (5.4%).<sup>43</sup> Recently, people have become more informed on the use of CAM

through the media (such as television and Internet). For the herbal products used most commonly in the preoperative period, the areas used, side effects, the drugs with which they interact, and the surgical implications (such as time to stop the use of the product before surgery and the risk of bleeding) should also be known. From a holistic perspective, the patient's medical history regarding such product use should be inquired, including how long they have been using it and when they stopped. People generally believe such "natural" products are harmless and do not inform health care providers about their use.<sup>44</sup> Furthermore, patients who use such products should be informed that the overuse of garlic or ginger may affect clotting factors or blood sugar regulation, licorice may cause hypokalemia and hypertension and salt retention, along with edema,<sup>16,17,44,45</sup> and that it is necessary to cease *Echinacea* use at least 2 weeks before undergoing surgery because its long-term use may cause the suppression of the immune system and decrease the effects of steroids.<sup>44</sup>

As a result of the growing interest in complementary therapies, individuals and institutions that are not health professionals have attempted to meet this unmet need, and consequently, the involvement of health care professionals and nurses, who are responsible for meeting the health care needs of individuals and society, in complementary therapies is of vital importance.<sup>46</sup> In this regard, nurses should be expected to expand their nursing skills to include knowledge of complementary therapies, to determine effective strategies, and to guide healthy and sick individuals on the effective and proper use of complementary therapies. Complementary therapies can be implemented as nursing interventions in studies.<sup>15,46,47</sup> In this context, using complementary therapies is the independent role of professional nurses who have institutional information and scientific problem-solving skills.

The use of CAMs, particularly herbal remedies, in both the postoperative and preoperative periods, for different reasons is common. Although many beneficial aspects of CAMs have been reported, many harmful situations may also occur unless these are used under some form of control. Thus, health care providers should know the areas in which herbal medicines are used, their side

effects, the drugs with which they interact, and how long before surgery herbal medicines should be stopped. In the present study, we evaluate the use of CAMs, which are common in Turkish society, in surgery patients.

## Methods

### *Study Design*

This cross-sectional and descriptive study was conducted to evaluate the use of CAM in surgery patients.

### *Study Setting*

This study was conducted at a university hospital in Turkey between January 1 and June 30, 2016, on volunteer inpatients of the General Surgery, Gynecology, Ophthalmology, Chest Surgery, Urology, and Brain Surgery Clinics who were scheduled for surgery.

### *Samples*

The sample included volunteers ( $n = 807$ , equating to 67.25%) from the 1,200 surgery patients, aged 18 years and older who presented to the General Surgery, Gynecology, Ophthalmology, Chest Surgery, Urology, and Brain Surgery Clinics for elective surgery.

### *Data Collection*

A question form was prepared by the researchers based on a review of the literature,<sup>2,14,48-50</sup> and was presented to the respondents in two parts. The first part of the questionnaire aimed to garner data on the patients' sociodemographic characteristics, including age, sex, education level, marital status, social security status, working status, monthly income status, chronic diseases, drugs used, reasons for hospitalization, and views on CAMs. The second part included 20 questions that examined the CAM practices commonly used by surgery patients in Turkey.

### *Intervention and Measures*

The question forms were filled out by researchers when interviewing the volunteer patients. All the interviews were held after 4.00 p.m. on a weekday

between January 1 and June 30, 2016, with each interview lasting around 20 to 25 minutes.

### *Ethical Considerations*

Before initiating this study, the necessary written permissions were granted by the Gazi University Health Research and Application Center, and the ethical aspect of this study was verified by the Keçioren Education and Research Hospital, Clinical Research and Ethics Committee with B.10.4.İSM.4.06.68.49 ethical permission. Verbal and written approval was obtained from each patient who participated in the study.

### *Statistical Analysis*

The statistical analysis was performed using SPSS for Windows version 21.0 Software (International Business Machines Corporation, Armonk, NY). Descriptive data were expressed as frequencies and percentages. A  $\chi^2$  analysis was applied to examine the relationship between the sociodemographic characteristics of patients and the use of CAM, and a  $P$  value of  $< .05$  was considered statistically significant.

## Results

### *Characteristics of Participants*

Of the 807 volunteer patients, 58% were in the age group 40 to 64 years, 56.3% were female, 38.3% were primary school graduates, 87.0% were married, 88.4% were living in a city, 40.3% were housewives, 63.9% were in the middle-income group, 55.0% had a chronic disease, 21.1% were followed for a previous malignancy history, and 54.0% were undergoing continuous drug treatment (Table 1). As can be observed in Table 1, of the patients with a chronic disease, 65.6% were suffering from cardiovascular system diseases, and of them, 58.5% believed in the benefits of CAM methods, and 46.3% had learned their knowledge of CAMs from the media (eg, television, magazines, newspapers, and the Internet).

In this study, 65.9% of the patients used CAMs, and of them, 87.4% used herbal methods in the form of the mint-lemon mixture (32.5%), lemon (30.1%), lime (28.6%), and stinging nettle (11.83%) (Figure 1). The other less chosen herbal methods

**Table 1. Characteristics of the Participants (n = 807)**

Characteristics	n	%
<b>Age groups</b>		
≤40 y	131	16.2
40-64 y	468	58.0
≥65 y	208	25.8
<b>Gender</b>		
Female	454	56.3
Male	353	43.7
<b>Marital status</b>		
Married	702	87.0
Single	105	13.0
<b>Occupation</b>		
Retired	249	30.9
Housewife	325	40.3
Employed	208	25.8
Student	24	3.0
Unemployed	1	0.1
<b>Monthly income</b>		
Low	248	30.7
Middle	516	63.9
High	43	5.3
<b>Education level</b>		
Primary school	309	38.3
Junior high school	108	13.4
High school	189	23.4
University	113	14.0
Master	25	3.1
No education	63	7.8
<b>Living place</b>		
City	713	88.4
Countryside	94	11.6
<b>Chronic diseases</b>		
Yes	442	55.0
No	365	45.0
<b>Continuous drug treatment</b>		
Yes	436	54.0
No	371	46.0
<b>Diagnosis</b>		
Cancer	174	21.6
Other	633	78.4
<b>Total</b>	<b>807</b>	<b>100.0</b>

(0.22%–9.68%) were flaxseed, coneflower, St John's Wort, *Valeriana officinalis*, licorice, daisy, cherry stalk, winter tea, rosehip, honey and cinnamon, cumin, propolis, omega 3, bee milk (royal jelly), onion, dill, sorrel, form tea, honey and herb mixture, milk and lemon mixture, herbal medicine, willow herb, carob, clove, eucalyptus juice, dandelion, senna, cranberry, balm, lavender, cabbage, mallow blossom, apple juice and cinnamon,

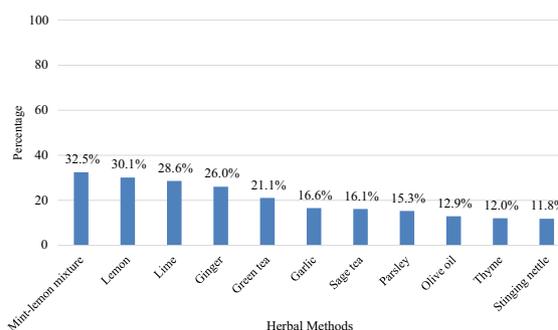


Figure 1. Distribution of the herbal methods. This figure is available in color online at [www.jopan.org](http://www.jopan.org).

spinach, laurel leaf, honey, ginseng, molasses, rosemary, kefir, hot water, broccoli, pomegranate flower, neat's foot soup, juniper oil, and horsetail.

Among the most used cognitive-behavioral methods (63.7%), 60.5% of patients chose hot-cold applications, 47.5% preferred daily prayer, and 25.9% occasionally used massage methods (Figure 2). Although not seen in the graphic, 0.29% to 5.6% of the patients used various methods, such as dreaming, psychotherapy, yoga, meditation, acupuncture, distracting attention, hypnosis, aromatherapy, hijab and hirudo application, and tying a scarf tightly around the head to treat a headache, which is common among Turkish people. In this method, pain can be controlled or minimized by touching and applying pressure to the head, which can be explained by the gate control theory.

As shown in Figure 3, patients who chose both herbal and cognitive-behavioral methods were

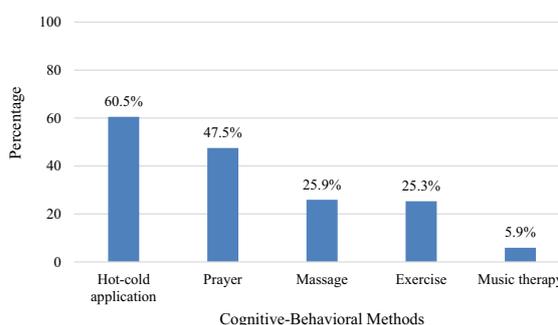


Figure 2. Distribution of the cognitive-behavioral methods. This figure is available in color online at [www.jopan.org](http://www.jopan.org).

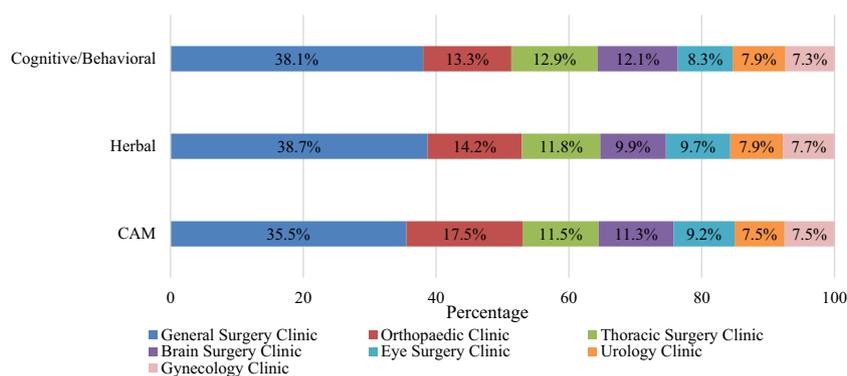


Figure 3. Distribution of methods according to the patients' clinics. CAM, complementary and alternative medicine. This figure is available in color online at [www.jopan.org](http://www.jopan.org).

most frequently hospitalized in the General Surgery Clinic (35.5%), Orthopaedic Clinic (17.5%), and Thoracic Surgery Clinic (11.5%). As for the most preferred herbal methods according to these clinics, the most popular were linden (51.7%) in the General Surgery Clinic, garlic (21.2%) in the Orthopaedic Clinic, parsley (40.5%) in the Urology Clinic, and lemon (50.0%) in the Gynecology Clinic. The general reason for using such products was to eliminate postoperative nausea and vomiting. When the cognitive-behavioral methods were examined, hot-cold applications were found to be the most preferred treatment in the General Surgery Clinic (65.9%), Orthopaedic Clinic (57.8%), Thoracic Surgery Clinic (70.5%), Eye Surgery Clinic (68.3%), and Brain Surgery Clinic (57.1%). In the Gynecology (77.8%) and Urology (76.0%) Clinics, prayer was the most preferred method in this regard.

An analysis of CAM use regarding the patients' sociodemographic characteristics revealed no statistically significant relationship between the age groups ( $P = .497$ ), although a statistically significant relationship was found not only between the sex groups, but also between the education level groups regarding CAM use status ( $P = .003$ ,  $P = .018$ , respectively). Higher educated patients (master graduated) and female patients were seen more likely to adopt CAM methods.

## Discussion

As the term implies, CAMs are used to contribute to traditional medical treatments and continue to be popular both in Turkey and around the world.

CAMs can be used in particular to ease chronic pain, to eliminate nausea and vomiting, for the treatment of diabetes and hypertension, for weight loss, and in every stage of the surgery process.<sup>2,3,12,14-17</sup> The use of CAMs over such a wide area and their many medicinal effects demands that health care providers follow these methods carefully.

One of the groups in which CAM use is very common is surgery patients. In the literature,<sup>7,18,19</sup> the rate of CAM use in surgery patients has been reported to range from 23.0% to 57.4%. In the present study, the rate of CAM use in surgery patients was found to be 65.9%. A total of 87.4% of patients who used CAMs preferred herbal treatments. In a study by Adusimilli et al<sup>20</sup>, 57.0% of patients used herbal methods, and of them, 30.0% opted for aloe vera and 27.0% for garlic. In a study of inpatient surgery clinics by Ertümer and Erdil<sup>43</sup>, 25.0% of the patients used herbal methods, and of them, 13.0% used sage, 11.0% used linden, and 5.4% used centaury. Similarly, in another study involving 430 inpatients of surgery clinics, around half of the patients used herbal treatments, with fish oil, primrose, and garlic being the most common.<sup>51</sup>

In the present study, the most popular cognitive behavioral methods were hot-cold applications and prayer. Araz et al reported that the most commonly and regularly used CAM practice was praying (31%).<sup>48</sup> In another study conducted with elderly patients, it was determined that 30% preferred to pray and 26.2% preferred to exercise.<sup>12</sup> In another study, 80.0% of patients

preferred prayer as a CAM, which is consistent with the findings of the present study.<sup>52</sup> Acupuncture, massage, and aromatherapy were most used CAMs in another study of surgery patients.<sup>51</sup>

Although there have been several studies that showed the efficiency of complementary and alternative therapies, there are many questions that must be answered through well-organized scientific studies regarding the safety of CAMs, and whether they may have an adverse effect on both healthy and ill people.<sup>46,53</sup> Most individuals believe that natural treatment methods are harmless,<sup>16,54</sup> although serious problems may arise, particularly in the elderly, resulting from interactions between herbal products and prescribed drugs, unexpected side effects, or herbal products that affect the efficacy of prescribed drugs.<sup>45,55,56</sup> The most significant problem related to the use of herbal products is the potential for drug interactions that may not yet have been defined.<sup>1</sup> The most common herbal products in our study included mint-lemon, lime, ginger, green tea, garlic, sage, parsley, olive oil, and thyme-olive oil (Figure 1), and the potential side effects of these products and their possible interactions with prescribed drugs have been reported.<sup>16,17,57</sup> Garlic and ginger, commonly used CAMs, may increase the risk of bleeding when used with anticoagulants.<sup>54,55,58</sup> Similarly, ginger, which is commonly used for postoperative nausea and vomiting, interacts with anticoagulants and antiplatelet drugs and may increase bleeding tendencies in patients. Ginger may decrease the efficiency of ulcer treatments given that it may increase stomach acid secretion, and adverse effects on blood pressure and sugar have also been reported.<sup>59-61</sup> On the other hand, mint and lime can be used for nausea, although its use must be controlled given that it may have toxic effects when used with an antiemetic.<sup>62</sup> Parsley, sage, and green tea, commonly used in weight loss programs, may lead to a liquid-electrolyte loss,<sup>18,63</sup> and green tea, which can be used for prostate enlargement, may have toxic effects when used alongside the drugs prescribed for treatment.<sup>62</sup>

There have been several studies that evaluated the relationship between the sociodemographic characteristics of patients and CAM use, and the findings showed that the herbal products are more popular among female, young, high school-

graduates, and high-income groups.<sup>2,17,64</sup> The elderly and patients with chronic diseases have been found to use more herbal products in other studies,<sup>2,16,17</sup> whereas other studies report CAM use rates of 33.3% in patients younger than 40 years and 47.7% in patients aged 40 years and older.<sup>65</sup> In our study, CAM use among women (70.26%) was found to be higher (70.26%) than in men (60.34%), which supports the findings in the literature. In addition, the CAM use rate among patients with a higher education level (master graduates) was 84.0%. No statistically significant relationship was identified between the age groups and CAM use status in our study.

The increasing interest in CAMs has recently led individuals and institutions with no health care background to attempt to meet the unmet needs of society in regards to the use of CAMs.<sup>46</sup> In the present study, about half of the patients gained knowledge of CAMs from the media (such as TV, magazines, newspapers, and the Internet), a finding supported by other studies.<sup>50,66</sup> Because knowledge of CAMs is generally garnered from the media, neighbors, friends, relatives, or patients with the same disease, it is often incomplete, biased, and sometimes wrong. Thus, it is of utmost importance to gain information on their use from health care professionals.<sup>50</sup>

### ***Clinical Implications***

Because many of the commonly used herbal products may lead to health problems, health care providers, particularly nurses, should focus on this issue. It is critical that any CAM use be recorded during the patient admission process, and information on the use of CAMs, particularly herbal products, should be provided given that CAM is likely to affect the surgery process of patients. Nurses, therefore, should devise care plans and provide discharge education in this direction.

### ***Study Limitations***

Because this study is conducted only in a single center, the results cannot be generalized.

### ***Conclusions***

More than half of the patients in our study used CAMs, making it of paramount importance that

health care providers, particularly nurses, maintain adequate knowledge of the approaches of the society to CAMs and understand the possible benefits and harms in the use of CAMs. The necessary applications for patient safety related to this issue must be initiated. The potential risks and benefits associated

with the use of CAMs should be investigated further.

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