

Use of complementary and alternative medicine (CAM) methods by cancer patients admitted to oncology polyclinic and evaluation of these methods for life quality

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Abstract

Aim: In the present study, our aim is to assess cancer patients receiving treatment in Outpatient Chemotherapy Unit in terms of demographic characteristics and life quality and to investigate the use of CAM methods and the factors affecting the use of such methods.

Material and Methods: The sample of this descriptive study consists of 100 cancer patients treated in Outpatient Chemotherapy Unit. A questionnaire form was used in the study as a data collection tool. The questionnaire form prepared following the approval of local ethical committee was applied to the patients admitted to oncology unit for outpatient chemotherapy.

Results: 56% of patients were males and 44% of them were females. They were aged minimum 40 and maximum 89. 39% of patients had breast cancer, 22% of them had colorectal cancer, 20% of them had lung cancer, 15% of them had prostate cancer, 2% of them had uterine (endometrium) cancer, and 2% of them had bladder cancer. 23 out of 100 patients in the sample used alternative treatment methods. 20 of them preferred herbal therapy while 3 of them used acupuncture. A great majority of patients resorting to alternative treatment methods were housewives and had lung, breast or colorectal cancer. It was observed that less patients with urogenital cancer resorted to CAM methods.

Conclusion: As a result of this study, it was detected that 23% of cancer patients used one of the CAM methods, the most common one being the herbal therapy. Physicians and other healthcare professionals must be knowledgeable about the effects and side effects of these treatment methods and must warn the cancer patients about their probable complications. Moreover, an interesting result is that, in Turkey, cancer patients are not informed on their diagnosis by relatives and healthcare professionals.

Keywords: Cancer; Phytotherapy; Complementary Therapies; Alternative Medicine.

INTRODUCTION

Many complementary and alternative treatment methods such as molybdomancy (lead pouring), removing warts with horse's tail and herbal teas have been used for centuries in our country and around the world for disorders ranging from gas pains to abortion, to anemia and jaundice, to wounds and burns, skin diseases, metabolic diseases, to cancer and mental disorders. The main purpose of complementary medicine is to support the actual medical treatment. In addition, although alternative medicine is not clearly defined, the main purpose is to create a better treatment alternative to medical treatment by using a substance, plant or chemical compound whose efficacy is not entirely known. Alternative medicine is an unrecognized method in modern medical community, however it is closely followed and its effects are monitored.

Complementary and Alternative Therapies are a sort of treatment option dating back to pyramids in Egypt, having been used for centuries and collectively called CAM method (1-4). It was observed in a study that the most commonly used CAM techniques in rheumatoid arthritis patients were herbal therapy and food supplements, tai chi, yoga, acupuncture, homeopathy, relaxation and mental healing techniques, manipulation, massage and meditation methods, however these CAM practices were utilized as supportive treatment methods, not as an alternative to medical treatment (5). Treatments of this kind are called Chinese Medicine or Oriental Medicine by the public. It is observed that individuals resorting to these treatment methods are mostly cancer patients thinking that they are faced with an incurable disease. However, these treatment methods are becoming more popular in recent years in our country due to widespread

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internet use, frequency of diseases and people's desire to use natural methods. Although many studies are available in the literature regarding these methods, very few of them were conducted in our region. In a literature study, it was detected that among 1000 patients admitted to the dermatology polyclinic, young and single individuals with higher educational levels used CAM techniques more often and employed such methods as topical herbal therapy, saying prayers and balneotherapy particularly in psoriasis (6). More studies were conducted with adults while a limited number of studies were conducted with children, and it was reported that at least half of the asthmatic children, nearly 70% of children with attention deficit and hyperactivity dysfunction, 65% of cancer patients, more than half of children with cerebral palsy received CAM treatment at least once (7).

Various conventional medical treatment methods are applied to cancer patients including surgical treatment, radiotherapy, chemotherapy and immunotherapy. However, patients and their relatives tend to seek alternative methods in advanced stages of cancer since patients are physically and mentally worn out and also severe side effects of chemotherapy become excruciating. Moreover, lack of nutrition intake, intense pains and long-lasting vomiting drive patients to reject chemotherapy. As with many other diseases, people continue to evaluate all options to survive cancer and use most of the complementary and alternative treatment methods with herbal content that they consider harmless to themselves. It is also becoming more prevalent to prevent complications induced by chemotherapy and to seek alternative solutions to severe symptoms such as nausea and vomiting that cannot be prevented with pharmacological agents. In studies with cancer patients regarding CAM use, it was reported that approximately 30% of patients used these methods (8-10). This ratio demonstrates that CAM use is quite important for cancer patients. It was also reported that most of the patients sought an alternative to medical treatment in an effort to recover from severe side effects of cancer treatment and find solutions individually (11). The aim of this study is to investigate the frequency and reasons of cancer patients treated in Outpatient Chemotherapy Unit to practice complementary or alternative treatment methods by assessing their demographic findings and life qualities.

MATERIAL and METHODS

Study Design

Participants

The sample of this descriptive study consisted of patients diagnosed with various cancer types and treated in Outpatient Chemotherapy Unit. Patients were interviewed on their chemotherapy days. Prostate cancer patients, on the other hand, had been admitted to the Urology Polyclinic to have their prostate specific antigen (PSA) tested. Following the approval of local ethical committee (2016-01), 100 volunteer patients who had been admitted to Outpatient Chemotherapy Unit of Oncology Clinic between

February 2017 and March 2017 were included in the study from 09:00 AM to 12:00 PM on a weekday when most patients were present. Exclusion criteria were determined as patients disagreeing to fill in the questionnaire.

Questionnaire Form and Application Procedure

In the light of literature information, a questionnaire form was prepared taking regional characteristics into consideration and this questionnaire form was used as the data collection tool in the present study. The questionnaire form was applied to the patients admitted to Oncology Polyclinic for outpatient chemotherapy. There were 21 questionnaire items in total. The first items were regarding demographic characteristics of patients such as age, gender, educational level, marital status, social security, residential area, occupation, monthly income and number of children. The second part of the questionnaire included questions regarding health status of patients such as physical disability, substance abuse and chronic diseases. In the last part, there were questions regarding awareness of patients about cancer disease and their alternative and complementary medicine practices. Dudu Bayraktar Önder, nurse and instructor in Health Faculty, was trained on the questionnaire form. Furthermore, oncology clinic nurses were also informed on the questionnaire. It was applied by the trained instructor to the patients treated in Outpatient Chemotherapy Unit of Oncology Clinic by using face-to-face interview method while they were waiting in the lounge for a chemotherapy session. Patients were informed on the questionnaire form and the items prior to its application. Verbal and written consents of patients and their relatives were received beforehand. The questionnaire applied to the volunteer participants was completed in approximately 25 minutes. Also, following the approval of ethics committee before the study, verbal and written permissions were received from both the Head Physician of Training and Research Hospital and the Oncology Department.

Statistical analysis

Statistical analysis were performed using GraphPad Prism version 6.05 (GraphPad Software, Inc., CA, USA). Data were expressed as numerical and percent values. The differences between categorical data were analyzed using Chi-squared test. A P value < 0.05 was considered statistically significant.

RESULTS

One hundred participant patients receiving outpatient chemotherapy were aged between 40–89 (median: 67) and 56% of them were males and 44% of them were females. 14% of patients were primary school graduates, 4% of them were middle school graduates, 38% of them were high school graduates, 37% of them were university graduates while others were illiterate; 89% of them were married, 84% of them lived in the urban area, 52% of them were retired, 48% of them were unemployed and 34% of them were housewives. Furthermore, almost all of the patients had health insurance. They answered the question of monthly income 700 TL and above. It was observed

that none of the patients had any physical disability and married patients had 2 children on average.

Distribution of patients according to their diagnosis showed that 39% of them had breast cancer, 22% of them had colorectal cancer, 20% of them had lung cancer, 15% of them had prostate cancer, 2% of them had uterine cancer (endometrium), and 2% of them had bladder cancer (Figure 1).

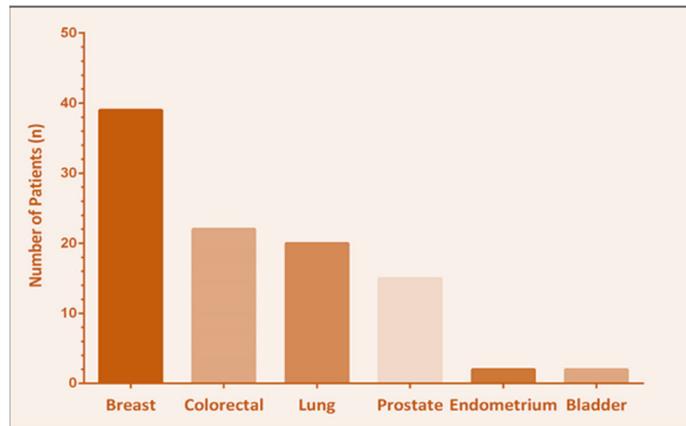


Figure 1. Distribution of patients according to cancer types

60% of patients stated that they learned these treatment methods upon the advice of another cancer patient, 12% of them learned the methods via social media while others learned them through various other ways. 23% of them answered Yes to the question "Did you resort to non-medical practices during your current disease?" All of the patients had resorted to CAM practices during their treatment in Outpatient Chemotherapy Unit. Answers to the additional question "Why did you resort to this practice?" generally focused on three aspects. 73% of them prioritized "overcoming the disease", 17% of them expressed that "they were afraid of the side effects of chemotherapy", while the rest of them said that they used alternative methods because they thought that herbal drugs were less harmful. In the present study, it was observed that 23% of participant patients resorted to one of the CAM treatment methods (Figure 2).

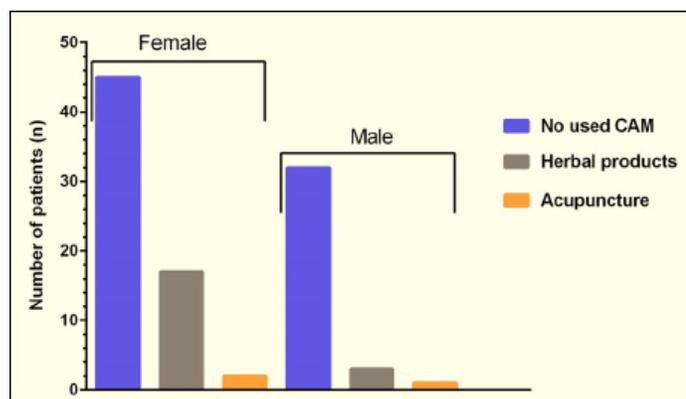


Figure 2. Use of CAM treatment methods

Among 100 patients in the sample, 20 patients used herbal therapy and 3 patients used acupuncture therapy out of 23

patients who said that they practiced alternative therapy methods. It was detected that 13 patients who practiced alternative therapy were females while 10 of them were males, 17 of patients who used herbal therapy were female while 3 of them were males, 2 patients who practiced acupuncture were males and 1 of them was females. On the other hand, 77 patients (Male:33, Female:44) did not use any alternative therapy (Table 1).

Table 1. Cancer Diagnoses of Patients and Frequency of Use of CAM Practices

Type of cancer	CAM Used		CAM Not Used		Total n
	n	%	N	%	
Breast	13	33	26	67	39
Colorectal	3	17	19	86	22
Lung	7	35	13	65	20
Prostate	-	-	15	-	15
Endometrium	-	-	2	-	2
Bladder	-	-	2	-	2

chi square (χ^2)=10.41, p = 0.0055

It is observed that the majority of female patients resorting to alternative treatment methods were housewives (12 patients). Out of 23 patients using CAM, 13 of them had breast cancer, 7 of them had lung cancer and 3 of them had colorectal cancer. All of the male patients with lung cancer stated that they used to smoke. 60% of patients said that they learned these treatment methods upon the advice of another cancer patient or his/her relative, 12% of them learned these methods via social media while others learned them through various other ways. It was noticed that participant patients had no knowledge of their diagnosis and were asked whether or not they were informed on their diseases by doctors. 74% of patients with breast cancer, 13% of patients with colorectal cancer, 35% of patients with lung cancer, 87% of patients with prostate cancer and 50% of patients with endometrium and bladder cancer had knowledge of their cancer (Table 2).

Table 2. Knowledge of Patients of Their Cancer Diagnoses According to Cancer Types

Type of cancer	Patient knows it's cancer		Patient does not know it's cancer		Total Number (n)
	Number (n)	%	Number (n)	%	
Breast	29	74	10	26	39
Colorectal	3	13	19	87	22
Lung	7	35	13	65	20
Prostate	13	87	2	13	15
Endometrium	1	50	1	50	2
Bladder	1	50	1	50	2
Total	54	-	46	-	100

chi square (χ^2)=30.31, p< 0.0001

DISCUSSION

None of the cancer patients reported the fact that they used any complementary treatment product to their

doctors in the chemotherapy unit because they were embarrassed or afraid. However, they expressed during the questionnaire that made researches about these treatment methods and used them at intervals, not every day, for fear of its harmful effects. It was reported in many studies conducted in Australia, America, Turkey as well as Asian and European countries that patients practiced one or more CAM treatment methods after being diagnosed with cancer due to the desire to live longer, feel better or recover from the side effects of chemotherapy (3,4,8-15). Moreover, in a study conducted in European countries including Turkey regarding the practice and types of CAM treatment methods, it was reported that CAM use increased three-fold following cancer diagnosis compared to pre-diagnosis (13). In the present study, it was observed that 23% of participant patients resorted to one of the CAM treatment methods, the most common one being herbal therapy with 20%. Similarly, almost all of them said that they employed these methods to recover from cancer completely. It was also detected in this study that 3% of patients received acupuncture treatment (Figure 2). In a study, data collected from two questionnaires applied in 1998 and 2005 were assessed and it was observed that use of both CAM products and drugs increased in 2005 compared to 1998. It was reported that use of herbal products such as special foods, garlic, ginger, green tea and ginseng increased particularly among women with breast cancer and CAM use was increasing day by day (11). In the present study, patients stating that they received CAM treatment included 13 women and 10 men. Our study also revealed that herbal products were used mostly by breast cancer patients. 9 out of 13 women receiving herbal therapy had breast cancer. In line with the literature, our study also disclosed a tendency towards CAM treatment methods by female patients and patients with breast cancer. Several studies suggest that CAM use is more widespread among educated young individuals (6,8-14,16). In another literature, however, it was reported that CAM use was common among the elderly as well (12). Another study conducted in 2008 suggests that CAM methods are preferred by women and educated people (16). It was reported in a study with elderly patients that most of the participants had chronic diseases, 69% of them possessed knowledge about CAM use, 70.7% of them preferred herbal therapies (especially in cardiovascular diseases), and 69.3% of them preferred religious practices (mostly in endocrine system diseases) (17). In our study, we were unable to carry out a statistically significant assessment according to average age since the majority of sample consisted of elderly cancer patients. On the other hand, the finding that 13 of 23 patients using CAM were women is in line with the literature. It can be inferred from this result that women are perhaps more willing to hold onto life and exert more efforts for cancer treatment. Collective results from studies in the literature reveal a correlation between CAM use and single/solitary individuals (16). We did not investigate this kind of finding in our study. In the literature providing the summaries of studies conducted between 1999-2006 on CAM use by cancer patients in our

country, it was reported that patients with lung cancer, gynecological cancers, head and neck cancers, leukemia and lymphomas, gastrointestinal cancer and particularly breast cancer used CAM methods commonly and most of them preferred herbal therapies, gained benefits from these methods and did not inform the health professionals thereon (16). This study that contains a collection of CAM methods used by cancer patients is also in line with our study. It is expressed that visual media is the most effective in access to CAM methods. Patients also report that they obtain CAM-related information upon the advice of relatives, friends and acquaintances (16-21). In the present study, it was observed that most of the patients resorted to an additional treatment method upon the advice of another cancer patient. They stated that they followed these methods on visual media, however they started to use them upon advice since they find visual media unreliable.

It is observed that a great majority of patients sought remedies for their diseases, especially cancer, or for treatment-related symptoms regardless of whether alternative treatment methods are safe or not. This behavior is observed more frequently in parents whose children are sick. Although few studies are available on children, in a study where parents of patients with diagnosed respiratory tract infection were asked whether they practiced non-drug therapies, nearly 95% of parents used them rarely to frequently, 95% of them more or less saw the benefit of such practices, 92% of them had the same therapies themselves and 90% of them might reuse the method on their children (22). Patients employ herbal therapy methods that they deem natural especially in pains of unknown origin. In a study conducted with 535 patients admitted to the family health centre for pains, nearly 42% of them used an alternative treatment method to ease the pain and nearly 83% of them reported that their pains alleviated (18). Complementary medicine which is commonly used as a conventional treatment method is practiced concomitantly with traditional medicine although it is not recognized as western medicine by some authorities. Furthermore, it is observed that adolescents often opt for alternative methods instead of antidepressants (23). In six countries including Turkey and Belgium, homeopathy ranks first among CAM treatment methods (13). Although Asian ginseng, green tea, soy and tomato were observed to mitigate cancer risk, it was also stated that contradictions existed between studies (11). Also, more and more studies are conducted on the types of CAM methods, sources of information, reasons of use, prevalence of use and perceived benefit in cancer patients. It was observed in the compiled literature studies that herbal mixtures were used quite frequently and "stinging nettle" was the most commonly used plant (16- 21). We detected in our study that 23 patients answered positively to the question regarding the use of at least one CAM method and 20 of them preferred herbal therapy. It was seen that the most easily accessible plant was stinging nettle, they generally obtained the plants via

an acquaintance but they were not sure of the contents of these plants because they usually bought them off-the-shelf. Out of herbal therapies, homeopathy, aromatherapy, food and vitamin supplements, the most frequently used CAM method is, as supported by our study, the herbal therapy method (12-15). It is known both by the public and the visual media that CAM treatment methods are commonly used; in addition, studies conducted emphasize that their frequency of use is between 36% and 70% (21). Although herbal therapy options are numerous in our country and especially in Aegean Region, there is no comprehensive study in the literature investigating and revealing the anti-cancer effects of these plants. Some studies are available demonstrating that there are various endemic plants specific to our country, some of which may provide protection against oxidative stress and thus cancer and other diseases. Moreover, teas made from these commonly used plants such as mint are frequently used for many diseases from gastric disorders to cold (24). While these herbal teas and mixtures can be completely harmless when used in this manner, we have no adequate knowledge of their side effects that may occur if used by cancer patients. In a particular study, CAM users said that they preferred alternative treatment because it aligned more with their health and life philosophy, not because they were dissatisfied with the medical treatment (23). We can say that this approach is actually common within the Turkish community and an orientation towards an alternative method is quite frequent no matter which treatment is provided by the physician. In another study, it is reported that individuals practicing CAM have health professionals among their relatives or acquaintances (21). There are studies indicating that some physicians exhibit a supportive attitude while some of them have an against attitude toward CAM use (20). In our study, in the section where patients were inquired about their CAM use in cancer disease, it was observed that they were nervous about talking to their doctors regarding CAM use and did not deliver any information on this subject to their attending oncologists or other physicians. The presence of physicians who disapprove any complementary or alternative practice or approach them suspiciously may have caused the patients to be affected negatively and hide the fact that they received an alternative treatment. This result completely agrees with the results of other studies and we can conclude that all of the patients in our study practiced herbal treatment unbeknownst to their doctors. Studies also show that they continue to use CAM methods even after active chemotherapy (16). Since this study was conducted during chemotherapy, we could not inquire whether they used any alternative treatment method thereafter. In the last section of the questionnaire, participant patients were asked whether they had been informed by their doctors on what their diseases were and if they knew about the nature of their diseases. It was found that 74% of breast cancer patients, 13% of colorectal cancer patients, 35% of lung cancer patients, 87% of prostate cancer patients and 50% of endometrium and bladder cancer patients knew they had cancer. High

educational levels, living in an urban area, widespread use of internet and regular and frequent activities and screenings for raising awareness of breast and colorectal cancers may have produced this result. Furthermore, it was observed that 87% of colorectal cancer patients, 65% of lung cancer patients, 26% of breast cancer patients and 50% of endometrium and bladder cancer patients did not know their diseases and were told "you have enlargement in your prostate", "you have a scar in your intestine", "there is a spot on your lung", "you have a cyst in your breast". Some patient relatives expressed that they were afraid their patients would find out about the cancer and be scared of dying. Families and health professionals may have misinformed the patients for fear that their life qualities would decrease and lose hope if they heard about their diseases. Many patient relatives also said that they were beware of participating in the questionnaire due to the same reason. Since cancer patients are not directly informed on their diagnoses in our country, this may have an impact on their knowledge of their diseases.

Moreover, even though our study encompassed various types of cancer, chemotherapy and severe symptoms made it difficult for patients to answer the questionnaire items. Our limitations included working with cancer patients, insufficient number of patients in the sample and the single-centre nature of our study.

CONCLUSION

Cancer treatment is a significant treatment that has to be performed uninterruptedly. The interaction between herbal products and cancer drugs is not entirely known. Many people, especially cancer patients, receive herbal therapy as a complementary therapy to the cancer treatment. Herbal products are introduced to the market following phytochemical studies for structure and bioactivity assessment. Although approximately 420,000 plant species are said to exist in three stages, it is expressed that very little is known regarding conventional medicine preparation and effects of these plants. (3). Plants are mostly boiled fresh (a decoction) or extracted and very commonly used across the world as herbal medicines. Although these herbs are generally analyzed through various stages and hit the shelves as health products (3), it is concerning that the probable side effects of these herbs in cancer treatment is still unknown. However, herbal products are becoming increasingly popular due to the reaction against the use of synthetic drugs as a result of their serious side effects. Several types of cancer are curable in early stages with modern medical treatment, however, especially alternative and complementary treatment plays a significant role in cancer treatment among the public. Although it is generally accepted that use of herbal products to support the medical treatment is not harmful, healthcare professionals should know that herbal products must not be regarded as an alternative that replaces the actual treatment and may affect the efficiency of medical drugs during treatment. Differing attitudes of healthcare professionals toward the use of CAM by cancer patients

may encourage the individuals to hide the fact that they use such products. Therefore, it is important that both families and patient's relatives are trained since herbal medicines are often used independently from physicians and other healthcare professionals. However, alternative therapy is not officially recognized in Turkey yet. It is only practiced as an herbal and complementary medicine. It is also not regarded as part of conventional medicine due to the insufficient number of studies on safety and efficiency of CAM practices. Although it is recommended that individuals using alternative methods should be informed thereon by nurses and other healthcare professionals receiving special training on such methods, there are few healthcare professionals who can officially provide information. We recommend that personnel should be trained on CAM practices and if alternative therapies are to be performed, they should be done by healthcare providers.

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REFERENCES

- Özdemir A, Aba YA. Cancer and CAM (Complementary and Alternative Medicine) Paradox. *Int J Health Services Res Policy* 2016;1:28-35.
- Pan SY, Zhou SF, Gao SH, et al. New perspectives on how to discover drugs from herbal medicines: CAM's outstanding contribution to modern therapeutics. *Evidence-Based Complementary and Alternati ve Medicine*; 2013. p. 1-25.
- Pan SY, Gao SH, Zhou SF et al. New perspectives on complementary and alternative medicine: an overview and alternative therapy. *Altern Ther Health Med* 2012;18:20-36.
- Nahin RL, Barnes PM, Stussman BJ, et al. Costs of complementary and alternative medicine (CAM) and frequency of visits to CAM practitioners, United States, 2007. *Natl Health Stat Report* 2009;30:1-14.
- Dıraçoğlu D. Romatoid artritte tamamlayıcı-alternatif tıp yöntemleri. *Archives of Rheumatology* 2007;22:24-30.
- Kutlu S, Ekmekçi TR, Köşlü A, et al. Complementary and alternative medicine among patients attending to dermatology outpatient clinic. *Türkiye Klinikleri J Med Sci* 2009;29:1496-502.
- Muslu GK, Öztürk C. Tamamlayıcı ve alternatif tedaviler ve çocuklarda kullanımı. *Çocuk Sağlığı ve Hastalıkları Dergisi* 2008;51:62-7.
- Uğurluer G, Karahan A, EdirneT, et al. Ayaktan kemoterapi ünitesinde tedavi alan hastaların tamamlayıcı ve alternatif tıp uygulamalarına başvurma sıklığı ve nedenleri. *Van Tıp Dergisi* 2007;14:68-73.
- Richardson MA, Sanders T, Palmer JL, et al. Complementary/alternative medicine use in a comprehensive cancer center and the implications for oncology. *J Clin Oncol* 2000;18:2505-14.
- Ernst E. Prevalence of use of complementary/alternativemedicine: a systematic review. *Bull World Health Organ* 2000;78:252-7.
- Boon HS, Olatunde F, Zick SM. Trends in complementary/alternative medicine use by breast cancer survivors: Comparing survey data from 1998 and 2005. *BMC Women's Health* 2007;7:4.
- Astin JA, Pelletier KR, Marie A, et al. Complementary and alternative medicine use among elderly persons: one-year analysis of a blue shield medicare supplement. *J Gerontol A Biol Sci Med Sci* 2000;55:M4-9
- Molassiotis A, Fernadez-Ortega P, Pud D, et al. Use of complementary and alternative medicine in cancer patients: a European survey. *Ann Oncol* 2005;16:655-63.
- Horneber M, Bueschel G, Dennert G, et al. How many cancer patients use complementary and alternative medicine: a systematic review and meta analysis. *Integr Cancer Ther* 2012;11:187-203.
- Xue CCL, Zhang AL, Lin V, et al. Complementary and alternative medicine use in Australia: a national population-based survey. *J Altern Complement Med* 2007;13:643-50.
- Kav S, Hanoğlu Z, Algier L. Use of complementary and alternative medicine by cancer patients in turkey: a literature review. *International. J Hematol Oncol* 2008;1:32-8.
- Sağkal T, Demiral S, Odabaş H, et al. Complementary and alternative treatment methods among elderly individuals in living rural setting (kırsal kesimde yaşayan yaşlı bireylerin tamamlayıcı ve alternatif tedavi yöntemlerini kullanma durumları). *Fırat Üniveristesi Sağlık Bilimleri Tıp Dergisi* 2013;27:19-26
- Güngörmüş Z, Kiyak E. Ağrı yaşayan bireylerin tamamlayıcı ve alternatif tedaviye ilişkin bilgi, tutum ve davranışlarının değerlendirilmesi. *Ağrı* 2012;24:123-9.
- Kucukoner M, Bilge Z, Isıkdoğan A, et al. Complementary and alternative medicine usage in cancer patients in southeast of turkey. *Afr J Tradit Complement Altern Med* 2013;10:21-5.
- Özçelik H, Fadiloğlu Ç. Reasons for use of complementary and alternative medicine in cancer patients (Kanser hastalarının tamamlayıcı ve alternatif tedavi kullanım nedenleri). *Türk Onkoloji Dergisi* 2009;24:48-52.
- Yavuz M, Özcan İlçe A, Kaymakçı Ş, et al. Examination of the complementary and alternative treatment use with breast cancer patients. *Türkiye Klinikleri J Med Sci* 2007;27:680-6.
- Topaloğlu N, Yıldırım Ş, Tekin M, et al. Alternative treatment applications in children with respiratory tract infections in the west of Turkey. *Güncel Pediatri* 2013;11:23-6.
- Kemper KJ, Vohra S, Walls R. The use of complementary and alternative medicine in pediatrics. *Pediatrics*;2008;122:1374.
- Özdemir A, Bayşu Sözbilir N. the effect of mentha spicata l. dry powder and its different types extracts on certain biochemical parameters and total anti-oxidant capacity. *Kocatepe Vet J* 2016;9:12-8.